American Aviation

25c *The News Magazine of Air Transportation* August 1, 1947

New Era for Cargo

NO MORE HISTORIC step has ever been taken by the scheduled certificated airlines than the filing on July 15 by Air Cargo, Inc., of a consolidated air freight tariff which was to become effective August 1.

For the first time in the nation's history a single mode of transportation will operate under just one tariff pattern for the entire country. It is as streamlined as the airplane itself. Contrast this consolidated tariff with the library full of separate tariff books required for surface cargo transport, and progress in simplifying air freight is self-evident.

But what is happening in air cargo is more than the filing of a consolidated tariff. A new era for commerce is opening up with the expansion and extension of air freight facilities in a combined air-ground network that will do much to change the merchandising and inventory methods of American business.

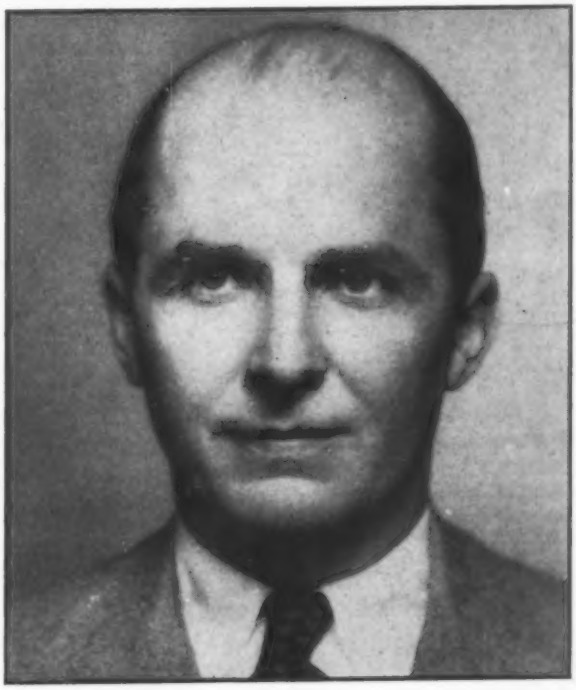
Step by step, Air Cargo, Inc., is setting up a national system of facilities through which the airlines can expect to increase the volume of freight and express many times over. With a minimum weight of 25 pounds per package under the new tariff now effective, the airlines are going after all types of cargo including the express business directly which has been handled exclusively in the past through Railway Express Agency's air express division.

Under the new tariff, also, is a greater coverage for air freight than ever before. No less than 2,500 cities and towns are listed and when the negotiations with the motor carriers are completed, no fewer than 90,000 points in the U. S. (according to statements by the motor carrier industry itself) will be available to the air-ground network.

The first consolidated air freight terminal is now in operation at Willow Run Airport, serving the Detroit area. Other terminals will soon be opened in New York, Chicago, San Francisco, Miami, New Orleans and other major cities. Air pickup and delivery services are being strengthened.

It is time, of course, that the airlines got busy to develop air freight and it is time, too, that they take over the job of handling air express direct. Carriage of all classes of property by air, excluding, of course, the bulk items which railroads will always carry, is

(Turn to page 8)

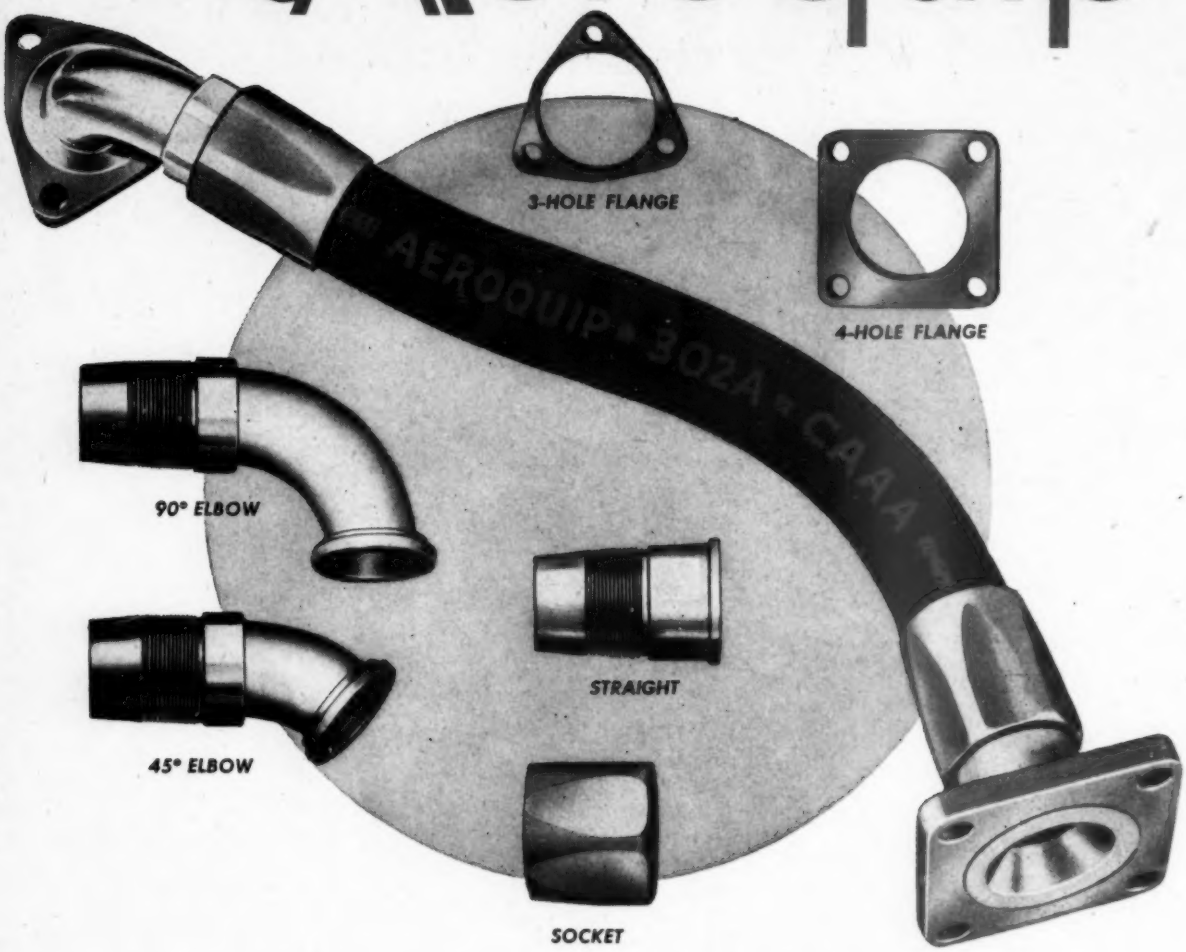


Directs PAA Traffic-Sales

Willis G. Lipscomb, who recently resigned as general traffic manager for American Airlines, is now vice president of traffic and sales for Pan American Airways. The veteran traffic executive fills the position formerly held by V. E. Chenea, who was ordered to part-time duty by his physician.

In This Issue

Aeroquip



AEROQUIP *FLANGE-TYPE* HOSE LINES*

A development to reduce weight, allow more flexibility in power plant and to reduce fire hazard.

Three-piece fitting, each individual part replaceable. Assembly without special tools. No adjustment or tightening after assembly. Fittings can be removed from hose and reused over 100 times.

Specify these new assemblies for lower cost, more safety, and easy maintenance.

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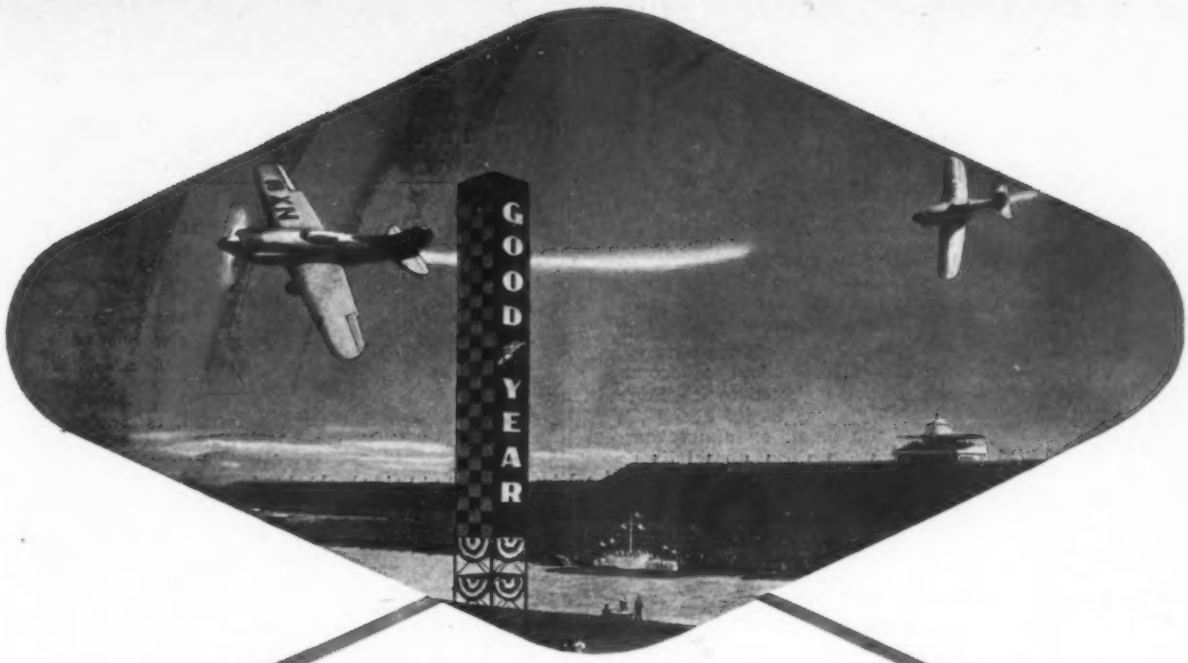

In the interest of progress

To encourage public interest in the development of light aircraft, to promote progress in their engineering and to stimulate research in new designs, the Goodyear Trophy Race with $25,000 in prizes is being inaugurated at the National Air Races in Cleveland on August 30, 31 and September 1. Goodyear, Aviation Products Division, Akron 16, Ohio; Los Angeles 54, California.

MORE AIRCRAFT LAND ON GOODYEAR TIRES THAN ON ANY OTHER KIND

—FORTNIGHTLY REVIEW—

★ ★ ★ ★

Influential Senators and Representatives feel that the divergent views of the military services and civil interests should be standardized into a single national program for all-weather flying aids. (Page 13)

A management control shakeup in Capital Airlines has resulted in election of Raymond C. Lochiel as vice president and comptroller with control of all expenditures. (Page 14)

Feederline dilemma: the lines can't afford to underwrite development and production of the type of plane they need, and the manufacturers don't have capital to risk on such a project. (Page 15)

The domestic airlines' first uniform air freight tariff, reducing rates and improving service, is about to become effective. Freight forwarders have objected to it. (Page 16)

You can now get an alcoholic drink on almost any international airline after leaving the continental limits of the U. S. (Page 25)

Airborne radar is seen as a means of reducing the hazards of terrain and the discomforts and hazards of flying through storms. (Page 35)

Truman Names 'Morrow Board'

President Truman, on recommendation of the secretaries of State, War, Navy and Commerce, and of the Air-Coordinating Committee, has named a five-man commission to help him formulate a policy designed to keep U. S. aviation strong in both war and peace. The board is similar to the Morrow Board set up by President Coolidge in 1925. President Truman said that U. S. security would be jeopardized if aircraft production dropped and if the aircraft industry failed to keep up to date. He asked members to assist him in forming "an integrated national aviation policy." Thomas K. Finletter, New York attorney, was named chairman of the commission, with George P. Baker, professor of transportation at the Harvard Graduate School of Business Administration, as vice chairman. Other members are Henry Ford, II, president of Ford Motor Co.; Palmer Hoyt, publisher of the *Denver Post*, and Arthur Dare Whiteside, president of Dun and Bradstreet Inc., New York.

Meanwhile, Congress served notice that it would conduct its own study when a House-Senate conference committee on bills to create an air policy board agreed to establishment of a Congressional Aviation Policy Board. There were indications that some Congressmen were irked by the President's action in appointing a commission instead of awaiting Congressional action on air policy board bills.

92,348 Aircraft and 5,074 Airports

Aircraft registrations in the U. S. have almost doubled during the past year, increasing from 52,899 on June 1, 1946, to 92,348 on same date this year, according to CAA. Number of airports in operation increased more than 800, from 4,268 to 5,074. There were 888 scheduled air carrier transports on June 1, compared with 687 a year ago.

Largest Helicopter Flight Tested

Army Air Forces' largest helicopter, the Kellett XR-10, has successfully completed its first test flight at the company's North Wales, Pa., plant. The twin-engined transport-type 'copter, powered by Continental 525 hp engines, was designed to service ground force units in ordinarily inaccessible places. It is capable of carrying 10 passengers, in addition to pilot and copilot, or cargo load of 2,000 pounds. Maximum speed is well over 100 mph, while range is 350 miles at cruising speed of 90 mph. *(Fortnightly Review Continued on page 6)*

AMERICAN AVIATION

The News Magazine of Air Transportation

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WAYNE W. PARRISH

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Other Publications

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International Aviation: Published each Friday. Subscriptions: $100 one year (52 issues). Frank M. Holz, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy $5.00. David Shawe, managing editor.

American Aviation Air Traffic Guide: Monthly publication of airline schedules, rates and regulations. Subscriptions: U. S. and Latin America $7.50 one year; Canada $8.00. All other countries $9.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. State 2154. H. D. Whitney, managing editor.

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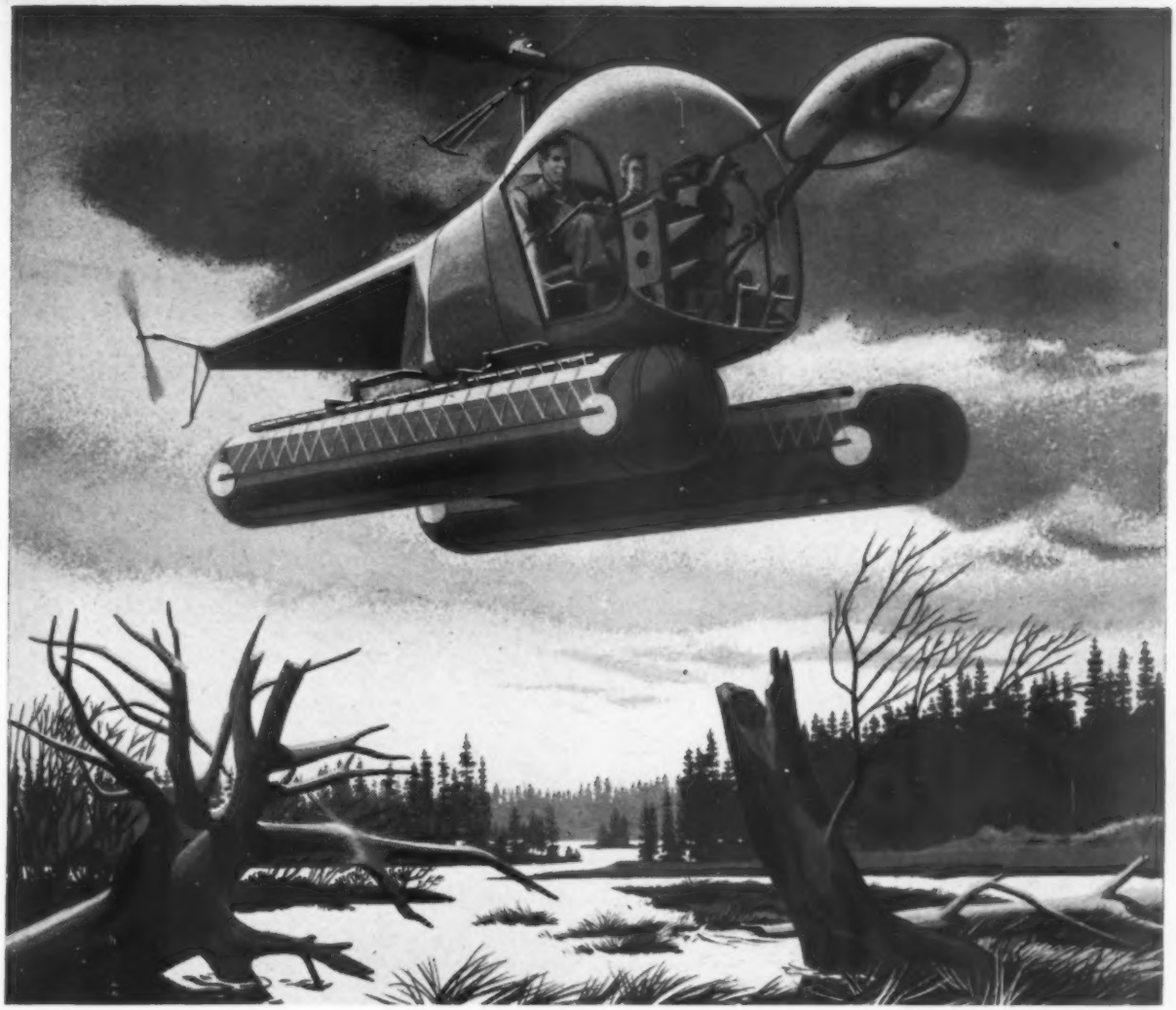

Prospecting by helicopter—*underground*

The utility of the Bell Helicopter reaches even to the muskeg, water and swamp of the Ontario wilderness—a land of untold riches. It explores for oil over the tangled bayou land of Louisiana. It is being readied for similar geological exploration in Mexico and Ecuador . . . and other even more far-flung assignments are being planned.

Hans Lundberg, Toronto, first made commercial use of a Bell Helicopter last summer when he leased a machine and equipped it with magnetic survey instruments. Then he set out for the north—in search of hidden ore deposits.

In one hour, from the Bell Helicopter, the same work was done that had required seventy days by skilled ground crews. Even in flight, the helicopter proved a steady platform for Lundberg's delicate instruments. **Findings tallied 100% with the known facts.**

With the Bell Helicopters purchased, Lundberg Explorations, Ltd., is now rapidly expanding its aerial explorations.

Today, Bell Helicopters are at work, operating profitably, from Maine to California, from Illinois to Texas. In Canada and Sweden. They are doing their jobs—almost any jobs their owners can conceive—in Hanson and Norwood, Mass., Rochester, N. Y., Camden, N. J., Brooklyn Village, O., Tucson, Ariz., Portland, Ore., Yakima, Wash., Los Angeles, Calif., Chicago, Ill., and New York City. They dust and spray crops, orchards, cattle . . . gather the news . . . speed mail and merchandise . . . survey real estate and woodland and highway traffic . . . patrol pipe and power-line and forest.

Wherever you are, The Modern Magic Carpet* can save time and make money for you, too. For full facts, write to Helicopter Division, Bell Aircraft Corporation, P. O. Box 1, Buffalo 5, N. Y.

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FORTNIGHTLY REVIEW

(Continued from page 4)

RFC Loans to Airlines

Recently-enacted Public Law 132, extending the life of the Reconstruction Finance Corporation for one year, gives that agency specific authority to make loans to airlines if such prospective loans have the approval of the Civil Aeronautics Board. Section 4 of the act said that "in connection with its approval of such purchases (of obligations) or loans (CAB) shall also certify that such air carrier, on the basis of present and prospective earnings, may be expected to meet its fixed charges without a reduction thereof through judicial reorganization, except that such certificates shall not be required in the case of loans or purchases for the acquisition of equipment or for maintenance."

ATC Increases Allowable Loads for C-47

Air Transport Command has increased peacetime gross loads on its C-47's from 26,500 to 28,000 pounds. During war these planes were flown with as much as 31,000 gross. The new gross compares with 25,200 pounds for passenger DC-3's, and 26,950 for cargo versions.

Beech, Bellanca Prices Upped

Price of the Beech Bonanza has been upped from $7,975 to $8,945 f.a.f. Wichita, and John P. Gaty, vice president and general manager of the Beech Aircraft Corporation, said it was his opinion that if any future changes are made in the price of the plane they will be upward and not downward. The price increase will not affect customers who have made an $1,800 deposit accompanying a firm purchase order, but holders of priority certificates who have made a $500 returnable deposit are not entitled to price protection.

Bellanca Aircraft Corp. has increased list price on the Cruisair Senior Model A from $5,950 to $6,350 and list prices on other models will be increased proportionately.

Congressional Scoreboard

Sea-Air and Chosen Instrument: Fast maneuver in House Interstate and Foreign Commerce committee prevented sea-air issue from going down to a plumping defeat. A show of hands of committeemen present revealed 15 out of 21 opposed to amendments to Civil Aeronautics Act permitting steamship applicants for air routes to come before CAB on equal status with air carrier applicants. Almost immediately the committee voted to expunge the secret vote from the record and then decided to take no action on sea-air or chosen instrument bills during the remainder of the session.

Merger: Long-deferred unification of armed forces, with Army Air Forces acquiring equal status with War and Navy departments, is now in the process of consummation as the result of passage of merger legislation by Congress last week. Navy was allowed to keep its air arm and certain land-based operations in connection with patrol and anti-submarine duties.

AAF: The House and the Senate agreed that the Army Air Forces will get $829,272,100 in direct appropriations for fiscal 1948, plus $430,000,000 in contract authorization for purchase of new planes. This is expected to permit the AAF to let contracts for new P-87 jets and for XF-12 photographic planes, of which the Rainbow is the commercial model. The bill as approved was larger than the House-passed version, additions being made by the Senate.

Notes in the News:

Senate War Investigating Committee has agreed tentatively to open hearings during the congressional recess with investigation of **plane-making activities of Howard Hughes.** The inquiry would deal with expenditure of $40,000,000 in government funds for a flying boat and two photo-reconnaissance planes built by Hughes . . . **Matson Navigation Co.** has suspended rebuilding and modernization of two of its trans-Pacific luxury liners, the Mariposa and Monterey, both well known in Pacific trade before the war. *Uncertainties as to effect of air* competition along with increased material and labor *costs are given as the reason* . . . **Weldon G. Gibson,** an AAF colonel *during the war, has been appointed to* head the Stanford University study of the health of the U. S. aircraft industry being made under grant from the Air Coordinating Committee . . . Step toward **simplification of international air travel** has been taken with stationing of Mexican customs and immigration personnel at Rio Grande Valley International Airport, Brownsville, Tex. Under Brownsville experiment, tourist flight clearances can be made in about 20 minutes and tourist can land anywhere in Mexico without further ado . . . **Consolidated Vultee** has redesignated its twin-engined 240 transport the "Convair Liner" . . . **Allison Division, General Motors,** this fall will place in production a new jet engine rated at approximately 7,500 hp at 600 mph, said to exceed the highest ratings established by jet engines in production anywhere in the world . . . Boeing's 67½-ton **Stratocruiser** has been taking to the air daily since its initial flight test July 9 . . . **First Beechcraft Bonanza** sold in Europe left La Guardia Field July 5 in a KLM Royal Dutch Airlines' C-54 freighter bound for Holland.

International

Sabena First Foreign Line to Get DC-6

The first DC-6 going to a foreign airline left Douglas Aircraft's Santa Monica plant on July 15 for New York and was flown to Brussels a week later and delivered to SABENA. The Belgian line and Douglas have made elaborate plans for publicizing the DC-6 in Europe: the ship will be flown to all the capital cities of Europe, excluding Russian controlled territory, and also will be taken to Cairo. Johannesburg and other South African points for display. New York-Brussels time was 13 hrs. 43 min. including a stopover at Gander of one hour 58 min.

Swissair Orders Four Convair Liners

Swissair has ordered four Consolidated Vultee 240 transports, bringing the number of foreign carriers which have ordered Convairs to five and manufacturer's total firm orders to 165. Others from whom foreign orders have been received are KLM Royal Dutch Airlines, Orient Airways, Ltd. of India, Trans Australia Airlines, and the Argentine company, FAMA. Swissair is slated to get delivery of its four Convairs early in 1948.

United Kingdom Accident Rate

United Kingdom airlines had rate of 8.1 passenger deaths per 100,000,000 passenger miles in 1946 compared with 1.2 on American air services, according to the British magazine, *Air Transport and Airport Engineering.*

Swedish-Canadian Agreement Concluded

Sweden and Canada have concluded an agreement which will permit Scandinavian Airlines System to inaugurate trans-Atlantic services to Montreal later this year. As Denmark and Norway also participate in SAS, it is presumed that these countries will make similar arrangements with Canada.

The stockpile of lead at the Bowers Battery and Spark Plug Company, Reading, Pa., was just about gone—and a lot of jobs would go with it. Scrap lead was to be had only if someone could get to a war surplus sale and inspect, bid and buy—in a matter of hours.

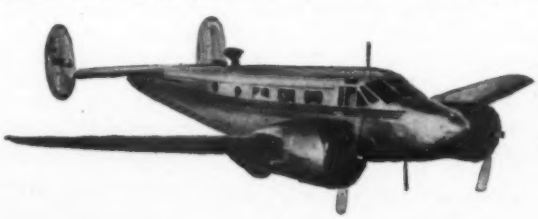
Thanks to an alert president, C. P. Bowers—and to his company's Beechcraft Executive Transport—those jobs were saved. In a 200 mph race with time, the bids were filed and the materials acquired.

The twin-engine Beechcraft Executive Transport has proved itself in the service of nearly 400 business corporations, economically and efficiently transporting executives, technicians and sales personnel to and from factory, branches, and markets at substantial savings in time and money. It accommodates up to nine people. It is gratifyingly quiet and comfortable. It is a fully equipped aircraft, for all-season, day and night operation.

As company transportation, the Beech Executive Transport pays its way—and returns a substantial dividend of rest and relaxation for harried executives to whom it gives the time and opportunity to get out of harness, now and then, for needed recreation.

There is a Beechcraft distributor near you with wide experience in company-owned air transportation. Ask him to study your requirements. No obligation, of course.

"Our business," says Mr. Bowers, "requires plants located hundreds of miles apart, from Massachusetts to Monterrey, Mexico, and from Macon, Georgia, to Oregon. The fast comfort of the Beech permits me and members of my staff to maintain a frequent, economical, and otherwise almost impossible personal contact with each of these operations. It is not uncommon for me to dispose of my morning's mail in Reading, visit our Elkton, Maryland, plants, go to Macon, arriving in mid-afternoon to spend several hours there, then fly on to Houston, arriving in time for a full night's rest."



Beech Aircraft

CORPORATION WICHITA, KANSAS, U. S. A.

Editorial

(Continued from page 1)

potentially very great. The resistance to air freight which the passenger-minded traffic and sales departments have had for so many years is beginning to disappear and Air Cargo, Inc., has made very healthy and progressive strides since its reorganization some months ago.

How big can air freight become? Much larger, we think, than most of the airline men believed possible a year or so ago. Certainly the growth trend since the war has shown the way toward the volume business that lies ahead.

There is no reason why the scheduled airlines cannot make the same penetration of the railway express business that they have made into the Pullman passenger business. They are comparable in that both are the most expensive and most expeditious means of surface transportation for property and passengers respectively.

Last year the airline scheduled revenue miles equalled 28.76% of the total Pullman passenger miles and in December, 1946, in fact, reached a peak of 44% of Pullman. Yet last year air express was only 3.2% of railway express.

In 1946 airline passenger revenue amounted to $275,000,000, while air express revenue amounted to $13,500,000. Yet railway express was a $416,000,000 business last year with a per shipment average of only 56 pounds. If the airlines penetrated railway express business to the same extent that they did the Pullman business, air express would have amounted to $116,000,000. And air express is only part of the over-all air freight potential.

Air freight on scheduled airlines has shown a remarkable growth since the war. Last year it increased from 277,279 ton miles in January to 2,846,023 ton miles in December with an industry total for the year (including American's contract cargo division) of over 22,000,000 ton miles. Nonscheduled operators exceeded this total by some 5,000,000 ton miles. But this year, 1947, will see a 54,000,000 ton-mile figure for the scheduled airlines, a truly phenomenal increase and one indicating the serious effort the airlines are making in this field.

The scheduled certificated airlines today are coming amazingly close to the volume express and freight market even with airplanes that were never designed for low ton-mile-cost service. New REA rates filed with the ICC boost rail express to rates as high as 11½c a ton mile. The certificated airlines are now down to 20c a ton mile for shipments of 100 pounds, and down to 14½c to 15½c for volume shipments. The gap is narrowing. In fact the premium for speed is very little considering 8th day delivery by rail from east to west coast, and overnight delivery by air.

What is needed now, of course, is genuine cargo equipment. When the airlines flew the old Fokkers and the Boeing 247's with their high seat mile costs, the lines couldn't compete with surface for volume passenger business. But the Jack Fryes and others pioneered new airplanes with lower seat mile costs so that today a 5c per mile passenger fare is directly competitive with the volume market. The airlines have done very well to lower costs to within a grasp of the volume express and freight market with C-54's which were never intended to be commercial cargo aircraft. With proper low ton-mile-cost equipment, the volume market will be open to the airlines on a competitive price basis, to say nothing of the speed advantage inherent in the airplane.

We think the air carriers were wise when they determined to oppose the granting of an indirect air carrier certificate to the Air Express Division of Railway Express Agency. There were ample reasons why the airlines went to REA in the early days of air transport to ask the railroad-dominated agency to form an air express division. But the time has now come for the airlines to break away and control their own potentially lucrative business. The CAB should not grant to REA an indirect air carrier certificate.

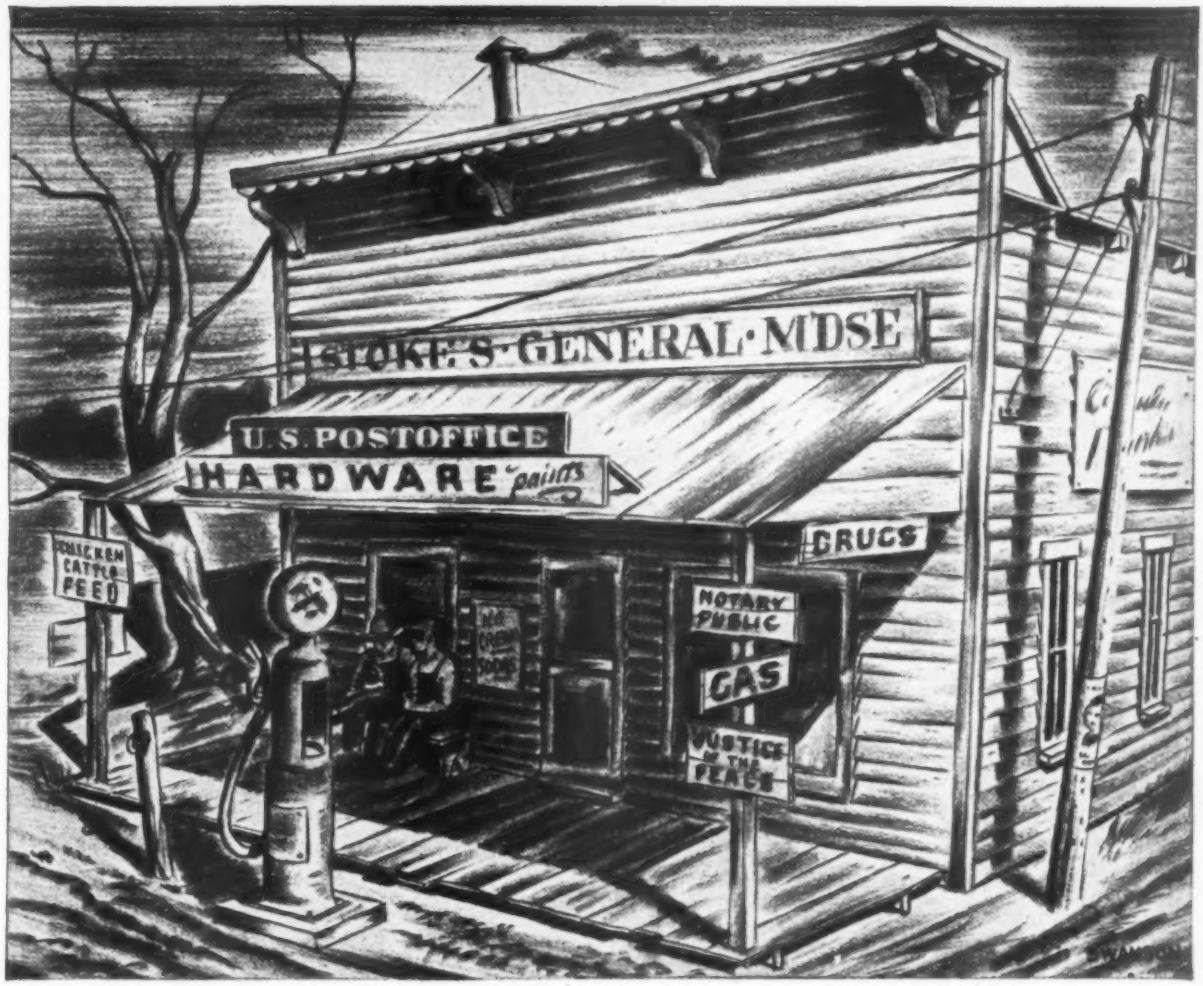
Fred Glass, president of Air Cargo, Inc., in presenting the policy position of all the certificated airlines summed up the position of the carriers with respect to the Railway Express Agency as follows:

"The air carriers cannot allow the development of a very substantial portion of their property business to remain in the hands of an organization which is not only wholly owned and completely dominated by the railroad industry, but which was created by the railroad industry for the very purpose of moving a type of property traffic via rail that the air transportation industry regards as constituting one of its greatest business potentials in the immediate future growth of property transportation by air."

The airlines, Glass said, "should not be forced to turn a very important part of its property business over to an organization such as REA and thus be saddled in the worst possible manner—dependence for traffic development and revenue—with control by its principal competitor."

The airlines have devoted 20 years to mastering the art and science of flying airplanes. For the past 10 years they have rather painfully been trying to master the handling of passenger traffic. Since the war it has become all-too evident that they had grown rapidly into the broad field of transportation without really learning what transportation is all about. It is much more than selling tickets, serving meals, and operating fast vehicles through the sky. There are indications that the airlines are beginning to appreciate the unlimited potential in the transportation of property by air and in this endeavor they need to have neither freight forwarders nor REA certificated by the CAB as indirect air carriers. They can do the job themselves and when they catch on to the problems, as they are doing with increasing rapidity, they'll do it far better than anyone else.

WAYNE W. PARRISH



Is This Like Your Base of Operations?

Deep in the country the age of specialization means nothing. One man does everything.

Aviation has "general stores," too. It's when men spread themselves thin trying to do too many jobs that require specialized knowledge and experience. The result is a handicapped hit or miss enterprise that can't efficiently offer competition. More often than not, this type of operation is a losing proposition from the start. Each time it's proven again: *The most frequent cause of aviation business failures is in the failure to employ skilled specialists.*

That's why, if you recognize and are dissatisfied with any "general store" elements in *your* operation, you'll be interested in the advantages of L&S service.

L&S is a firm of specialists. Each specialist concentrates on the problems involved in his part of your operation. Then what each man offers in diversified knowledge and experience is assembled into the vital L&S service that builds net profits for you. With L&S on the job your operation is staffed on a par with the largest.

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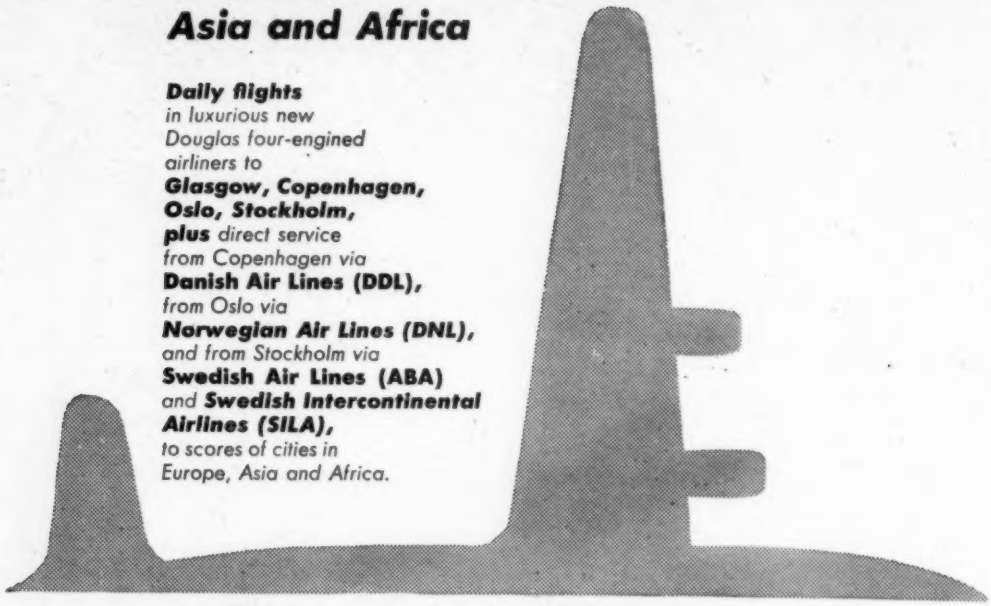
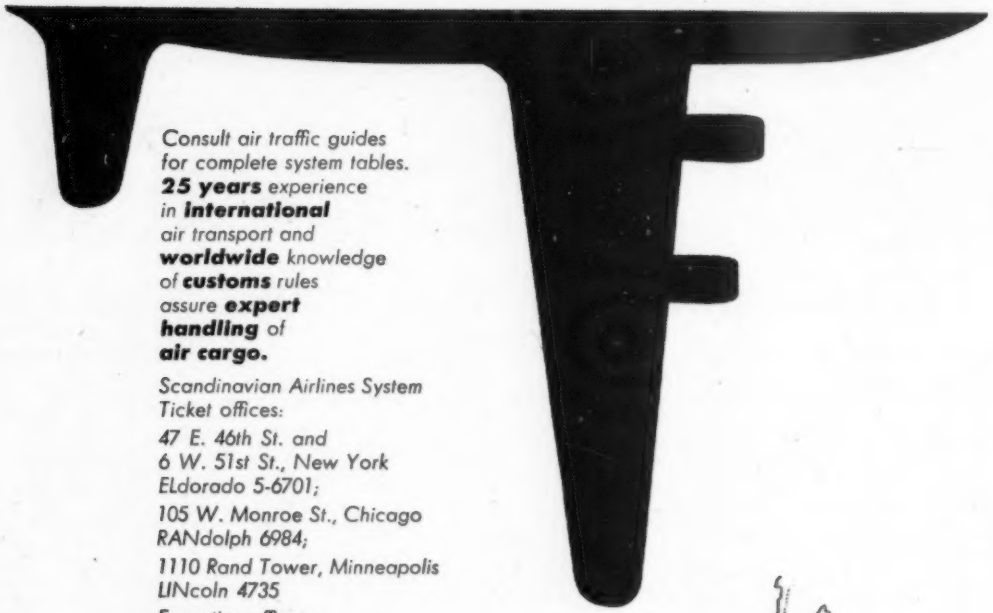


scandinavian airlines system



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RANdolph 6984;
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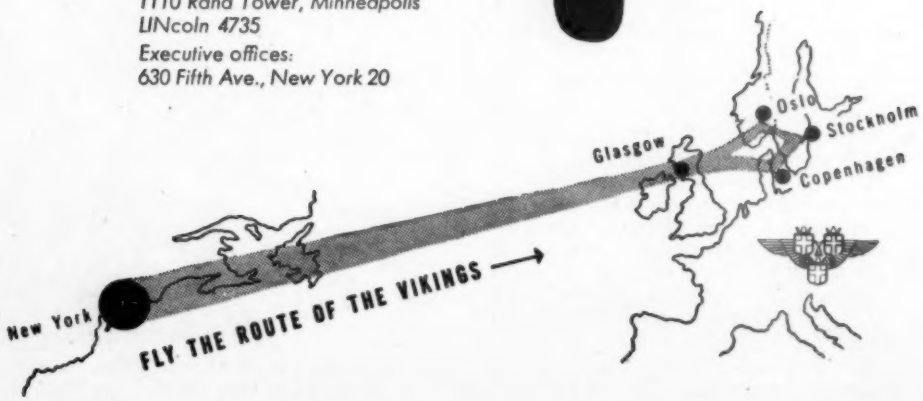


Background and Trends

(Significant Developments and Forecasts Based on the Fortnight's Top News)

Break-even Points: Some idea of improved airline financial positions expected through operation of new transports may be found in passenger load factors needed for break-even with the different types of equipment. American Airlines statisticians estimate break-even passenger load factor of 60% for both the DC-6 and Convair 240, compared with 90% for DC-3, 65% for DC-4.

Airport Feature: *LaGuardia Field is experimenting with a loudspeaker setup for announcements of plane arrivals and departures, complete with sidelights on plane types, capacities, speed and other factors for information of promenade spectators.*

Adding Seats: American Overseas Airlines is converting its Constellations from 39 to 43 seats. Company estimates that the additional capacity will increase potential passenger revenue on each New York-London flight by $1,300, or gross of $26,000 on the 10 round trips weekly across the Atlantic. Gross weight limitations are not affected, since cargo is being shifted to all-cargo planes.

JATO Quiz: *ATA is preparing to query airlines on practicabilily of using JATO as standby power source in event of engine failure, as result of recommendations made by President Truman's special investigating board. Aerojet Engineering Corp. feels JATO would best apply in connection with proposal to tighten up calculation of weight limitations and require additional runway lengths.*

Another Step: Consolidation of ticketing services is scheduled for August by seven of eight airlines serving the Detroit area, as part of the general terminal services consolidation being effected at Willow Run by Airlines Terminal Corp. With this accomplished, practically all services—except reservations—will have been unified.

Joint Action: *The airlines, through ATA, have decided to act jointly in negotiating leases and contracts at specific airports. The decision is understood to be based on collective action taken by airport managers through the Association of American Airport Executives in their attempts to establish uniform service charges.*

Popular Service: United Air Lines experienced passenger load factors of 97% eastbound, 86% westbound on its new DC-6 San Francisco-Honolulu service during May, first month of operation. Seats are reportedly sold into November. May passengers totaled 2,030.

Heavy Loading: *Floor loading strength of Lockheed's Constitution is designed for static load of 300 lbs. per square foot—equivalent to that of large iron foundries and in excess of many warehouse loading specifications.*

Drop: Early ending of the "European summer" in July brought a drop in trans-Atlantic air traffic. Airlines which enjoyed heavy boom in late spring and early summer now are having seats available; they are learning they know little as yet about the trans-Atlantic traffic flow and few have even begun a sales program.

Low Tariff: *Lowest rates in Slick Airways new freight tariff, effective Aug 1, will be only 15-20% higher than rail express, highest rates 66 2/3% below air express. Slick's new tariffs average 12¾c per ton-mile,*

Anomaly: Despite sales slump in personal plane market, Beach Aircraft reports that some Bonanzas are being re-sold by original owners at $2,000-$2,500 above retail list price. Beech attributes these premium offers for Bonanzas to "the very considerable backlog of orders" and "to the fact that Bonanza owners are finding a great deal of utility in an airplane which can equal airline schedules and operate at a per mile cost comparable to a single airline ticket, while carrying four people."

Helicopters: *Although Los Angeles Airways has purchased four Sikorsky S-51's to start its helicopter air mail service, it may still buy Bell 47's in augmenting its fleet. Clarence Belinn, L. A. Airways president, believes additional craft will be necessary for expansion after service gets started, but on some runs the 800 to 1,000-pound payload of the S-51 won't be required. Standardization of equipment isn't held to be vital in a development program.*

Home-Coming: Western Air Lines' new president, Terrill Drinkwater, is getting a big newspaper reception on the West Coast for his statements that Western has given up ambitions to be a transcontinental carrier and "coming back home to operate a truly 'western' airline." Western used to have close relations with its towns in the early days; Drinkwater is out to regain them. As the Las Vegas Review-Journal put it: "Now the airline is to be given back to the western public, and relations, once so closely-knit only to be strained by expansion, will be revived."

Coach Service: *Atlantic Airlines, applicant in the Middle Atlantic States Case proposing to operate a "day-coach" airline in the Washington-New York-Pittsburgh triangle, plans to spend one-fifth of its fare receipts for getting and handling passengers, compared with one-third spent by most existing airlines.*

Abandoned: While no official announcement has been made, every indication is that Douglas Aircraft has definitely abandoned the five-place Cloudster, executive-type plane with propeller in the tail. The plane was designed for top figure of $30,000, but the postwar increase in costs sent the price up to an impractical $68,000.

Cutback: *Lockheed is cutting back on its billboard campaign for the Constellation, restricting its outdoor displays mainly to airport locations. Its latest move in this respect was to flank both entrance and exit of Los Angeles Municipal Airport with twin boards reading: "The New Type Constellation—The World's Most Modern Airliner—Capt. Eddie Rickenbacker."*

Pressurization: Exemplifying how pressurization is progressing, the AiResearch Manufacturing Co. has supplied, or is supplying, cabin pressure control instruments for a total of 37 pressurized planes: 22 jet or gas turbine types, 8 conventional Army or Navy types, 7 commercial transports. AiResearch has developed 88 different pressure control instruments for the 37 aircraft.

Your future flies with them

Here they come! You feel the pride and the power in their full-throated engine roar. You marvel at the precise patterns of their echelons . . . the broad, strong sweep of their wings . . . the sure hands that guide them.

You realize suddenly that you are seeing more than just a spectacle. You are witnessing the peace power of American air power. For up there in the cloud-flecked sky flies our great hope for peace and security.

On August 1st — Air Force Day — the AAF at home and on far-flung outposts will rededicate themselves to that high purpose: to keep the peace they did so much to win.

We at Boeing claim a special kinship with the incomparable men of the Army Air Forces. For years, we have worked in close co-operation with them to develop and produce America's strongest guarantee of peace — a balanced, highly efficient, economical air force. We join with all Americans in paying tribute to them on Air Force Day.

AIR POWER
A A F
IS PEACE POWER

Take the children with you when you visit the exhibits at your nearest Army air base on Air Force Day.

BOEING

DESIGNER AND BUILDER OF THE B-17 FLYING FORTRESS, THE B-29 SUPERFORTRESS, THE NEW B-50, STRATOFREIGHTER AND STRATOCRUISER

Established June 1, 1937

American Aviation

Volume 11 Number 5

Congress Urges Standardized Aids

Hinshaw Report Asks Civil-Military Cooperation, Indicates Future Funds Will Go for Radar Airways

The intent of Congress regarding the nation's air navigation and landing aids program has been outlined in bold letters by the legislators who cut the heart out of this year's CAA appropriation request. The thinking of these men (and they will be holding the appropriation reins again next year) is down in writing where all the industry can see and reflect on it.

Action on the fiscal '48 appropriation for CAA was preceded by extensive hearings to which were summoned scores of industry and government experts on airway aids and bad-weather landing methods. These hearings, conducted by Rep. Carl Hinshaw's subcommittee (on aids to air navigation and landing) of the *House Interstate and Foreign Commerce* Committee, were attended or watched with interest by both sides *of Congress. Remarks from other* sources, such as Sen. Joseph Ball's blast (during Senate hearings) saying that CAA-proposed aids were not proved and that Army, Navy and CAA should get together on their programs, served to indicate that Hinshaw subcommittee members had been talking things over with other people on Capitol Hill.

Now that both the House and the Senate have completed action which leaves the CAA virtually without funds for new airway and landing aids, the Hinshaw group has published a comprehensive report on its findings and recommendations.

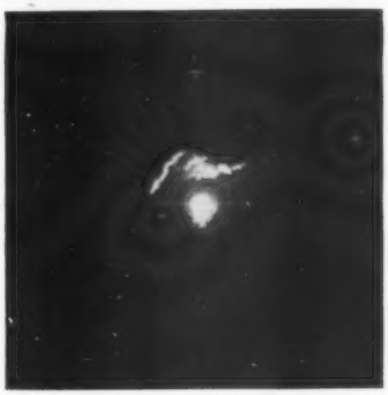
There are two major implications in this report:

(1) Congress has acquired a low opinion of CAA-favored ILS, omni-directional ranges and high intensity lighting; and

(2) Influential Senators and Representatives feel that the divergent views of the military services and civil interests should be standardized into a single national program for all-weather flying aids. The Hinshaw report gives favorable emphasis to airborne radar and radar beacon navigation.

Rep. Karl Stefan, chairman of the House subcommittee which handles CAA appropriations, states that the recommendations of the Hinshaw group will receive the "careful consideration" of his committee when new CAA requests are discussed. Stefan said that before new appropriation requests are considered he will call a conference of CAA, Army, Navy and airline officials to work out some agreement which he hopes will be satisfactory to all concerned. He stated that while he is not prepared to say his committee will accept all of the recommendations in the Hinshaw report, he is certain that his committee shares with him the desire to bring about greater standardization in the interests of economy and national defense.

The Hinshaw report is critical of the CAA ILS program and VHF omni-directional range program. It recommends that except for experimental *purposes further establish*ment of VHF omni-directional ranges be suspended, and that ILS installations be stopped pending development of an ILS that "promises to be satisfactory."



Thunderstorm at Night—

Airborne radar view of a severe storm just outside Washington on the night of July 11. Lightning made storm appear to stretch from horizon to horizon; radar showed it concentrated in a 40-mile path across the airway. Pilot changed course and flew along near edge, around far right tip of storm and into Washington without turbulence or rain. An airline pilot flying directly through it a few minutes earlier had reported conditions "very rough."

"Any efficient system of airways traffic control that can be envisaged at this time," the report states, "involves the employment of the principles of radar and responding radar beacons, and in view of the position of the Army and Navy in respect to employment of radar as a navigational aid, it seems the part of good sense to devise and install a civil airway system that will suit the purposes of the military forces.

"The resultant of all the factors involved indicates with reasonable clarity a radar beacon system of enroute navigation aids with a proper form of airborne radar and responding beacons, coupled with ground search and precision radar, as the system which should be installed. The program should commence with routes of highest traffic density, those routes being most in need of automatic traffic control."

Operational requirements for *standardized radar equipment, in addition* to the beacon navigation application, call for it to be satisfac*tory for terrain and storm warning* and adaptable to instrument approaches using radar beacons on runways. (See page 35 for story on these radar applications.)

An estimated cost of $15,000 per aircraft is listed for airborne radar installation. However, the report stresses that this figure could be reduced substantially by volume production for a military-civil program.

"A large share of this cost," the Hinshaw committee suggests, "might well be borne by appropriations for the armed services (75% is suggested), on condition that installation in commercial aircraft meet military air transport requirements."

Comparing the cost of a beacon airway system with other proposals which have been made, the committee states that radar beacons could be installed for less than $10,000 each —against something on the order of $90,000 for installation of ground equipment necessary with the VHF omni-directional range and distance measuring equipment.

In discussing pros-and-cons of VOR-DME equipment and automatic computing systems intended to be used with it, the Hinshaw group says that these are expected to be coupled with automatic traffic control "but this latter is at present only

a fond hope in fertile minds." It adds that proponents of automatic flight control tend to overlook both the limitations of metropolitan airports and the demands of private flyers whose planes cannot be fully equipped.

While recommending that a substantial portion of the cost of an airborne radar installation should be made by subvention to the airlines from military appropriations, the subcommittee express the view that no federal funds should be applied to a VOR-DME system.

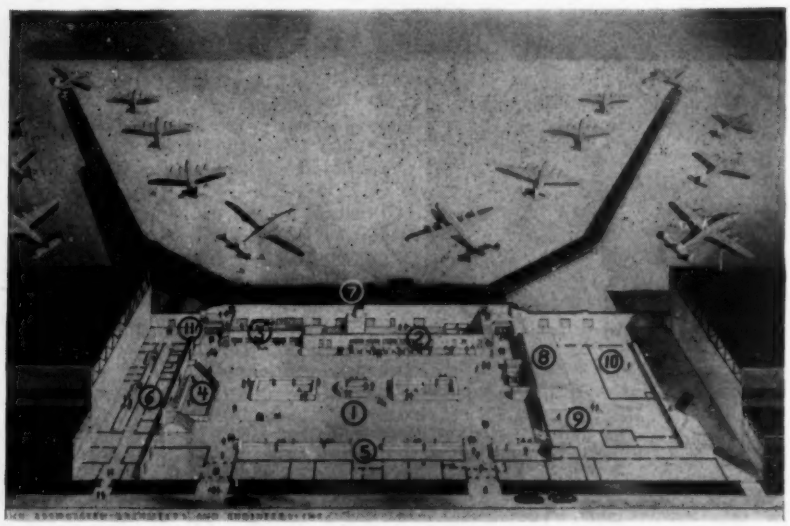
The committee expresses favorable views regarding VHF fixed course radio ranges, and recommends that a primary system of these ranges be installed as a substitute for the low frequency range system now in use.

In urging that funds be made available to selected manufacturers for development of automatic traffic control systems, the committee stresses that conditions at terminal airports rather than along airways tend to limit the flow of traffic under instrument conditions. The recommendation is that bottleneck airports be improved by the addition of parallel runways or development of alternate fields, and that in the meantime schedules should be limited and geared to the instrument operations capacity of fields where there are frequent weather delays or cancellations. The Civil Aeronautics Board is urged to dictate schedule limitations which cannot be worked out by airline cooperation.

The committee suggested that instead of the 20 war-surplus GCA sets for which the CAA requested operating funds, a program be set up for installation at selected airports of "the most modern GCA." It was pointed out that the Navy intends to use GCA exclusively, while the Army plans to use it exclusively for fighters and in conjunction with improved (UHF or microwave) ILS for heavier aircraft.

On the subject of approach and runway lighting for low-visibility conditions, the report points out that "most pilots seem to prefer a single string of approach lights" rather than parallel rows or funnels of lights. The committee recommends against high intensity approach lights as of little value except where fog dispersal systems are installed. Where minimums are greater than 400 feet and one mile the committee recommends bar neon approach lights, and where visibility limits are less than one mile the recommendation is for a single string of controlled-output medium intensity lights.

The report closes with an expression of censure against the "strong note of hostility" between CAA and other government agencies, and between certain civil interests and the CAA, which is said to "arise from a determination by the CAA to dominate in important decisions." The implication is that unless the CAA and the industry get together on an airway and landing aids program compatible with military plans, Congress will take matters in its own hands next year.



Consolidation at Willow Run—This architect's roofless version presents main points of construction at Willow Run airport used by airlines serving Detroit as their first venture in consolidating ground services through Airlines Terminal Corp. Features include covered walks leading to planes, separate international section with customs and immigration stations, and a movie theater. Detailed identification: (1) waiting room, (2) tickets and check-in, (3) baggage, (4) snack bar, (5) concessions, (6) immigration and customs, (7) promenade, (8) movie theater, (9) post offices, (10) air express (11) dining room and cocktail lounge (second floor).

Lochiel Given Control of Capital's Funds

In a shakeup in management control of Capital Airlines, the company's board of directors on July 15 elected Raymond C. Lochiel, vice president and treasurer, to the office of vice president and comptroller with "complete supervision of all corporation expenditures."

Informed sources said that virtual control of the company's purse strings was turned over to Lochiel, and that all expenditures must be approved by him in advance. This control, it was said, extends to all phases of operations, route development, all expense items, and even personnel.

Effect of the action, these sources claimed, was to place Lochiel on the same level as C. Bedell Monro, president of the company. In cases of disagreement between them over policy or on all other decisions of importance, Lochiel has instructions to go to the executive committee, headed by Gurdon Wattles, who represents the financial holdings of White, Weld & Co.

The action, it is understood, was precipitated by Monro in a last-minute decision to smoke out the opposition to the present management. Accepting the challenge, the directors asked the officers to leave the meeting, and then discussed changes in management control. The decision to elevate Lochiel to an "equal status" with Monro was said to have been a compromise, and one director described it as a "temporary expedient." The duality of control cannot be considered a permanent arrangement, another director said.

It is known that one large financial group favors a management change in Capital. There is also some sentiment for selling certain of Capital's routes as the only means of solving the company's financial crisis, and at least one group believes that the company should recognize the general trend in industry and dissolve the airline by selling all routes to a number of interested airlines. To date, no airline has indicated an interest or ability to buy the entire company, but a number have evinced interest in certain routes.

At the July 15 meeting, J. C. Herbert Bryant, Alexandria, Va. banker, was elected to the board of directors to fill a vacancy. Dewey F. Gruenhagen, of Minneapolis, representing Investors Syndicate, was named to the executive committee. Robert P. Wright, assistant treasurer, was named acting treasurer.

Feeders Start Freight Service

Pioneer Air Lines and Southwest Airways, feeder lines, were to start air freight service over their routes on Aug. 1.

Feederline Dilemma:

Lines Lack Suitable Plane, Manufacturers Lack Market

Is the Civil Aeronautics Board, after embarking upon an experimental feeder airline program, going to sit by and watch the program collapse for lack of suitable equipment, or is the Board going to act to salvage the program before it is too late? And, if the latter is to be attempted, by what means can the CAB see to it that the feederlines are provided with the kind of equipment they must have for sound operations?

Wrapped up in these questions is one of the most vexing dilemmas confronting the Board today, for it is evident by now that the feeder airlines cannot render a proper service on a feasible economic basis with the equipment now in use. On the other hand, aircraft manufacturers assert, and with no little justification, that they can hardly be expected to design, develop and produce a suitable feeder-type airplane without promise of a market giving them reasonable assurance of at least breaking even.

This matter of equipment for feederline operations was the subject of some discussion during oral arguments in the Middle Atlantic States Case in Washington last month. At one point, CAB member Oswald Ryan asked Hamilton O. Hale, counsel for All American Aviation, Inc., whether there is any aircraft now on the market that is adaptable to local feeder service, and Hale's answer was in the negative.

Later Hale told the Board:

"I don't think you'll get anybody to develop the feederline airplane until there is a market for it . . . I don't believe manufacturers will go ahead in a vacuum on a theory that the Board will certificate more feeders or will lay out a feeder program if they will just build a suitable airplane."

He pointed out that his company had ordered a number of the 14-passenger Lockheed Saturns and had subsequently been requested to cancel the order because the manufacturer didn't see enough of a market to justify putting the plane into production.

In addition to Lockheed's abandonment of the Saturn project, the Boeing 417, a 20-to-24 passenger feeder-type plane was dropped because of high development costs and an uncertain market, and work also was delayed on the Beech 34. The latter project has since been reactivated, and the plane is now being test-flown. Whether it will actually get into production is still problematical.

Indicative of the costliness of producing a feederplane is the experience of the Boeing Aircraft Company with the 417. This project was shelved after the manufacturer had invested $2,000,000 in studies and preliminary engineering work. To build a prototype would cost an additional $5-to-$7 million, the company estimated, and to put the 417 in production would have involved an investment of about $22,000,000.

Should Sell 300

In view of these costs, in view of the fact that possibly more than 300 planes would have to be sold to recoup the company's outlay, and in view of the uncertainty of survival of some of the feederlines, all of whose temporary certificates are good for only three years, the manufacturers are understandably reluctant to put up the capital needed to produce an airplane suited to feeder operations.

Meanwhile, though, the feederlines are faced with the task of proving during the tenure of their temporary certificates that they are capable of rendering a needed public service on comparatively short routes serving many smaller cities as intermediate stops, and can do so without imposing an undue burden on the government in the form of air mail payments. This task has been made doubly difficult because of the lack of a true feeder airplane. Equipment now being operated by the feeders is not designed for profitable operations at today's costs on short-haul routes with frequent intermediate stops.

A review of the equipment being used by the feederlines now operating shows that: Pioneer Air Lines, Challenger, West Coast, Monarch and Southwest use DC-3's; Empire uses Boeing 247-D's, and Florida Airways uses the Beech D18-CT and D-18S.

All in Red

Only seven of the certificated feederlines have begun operations to date, and are all losing money. Some have applied for additional route mileage in the belief or hope that this will solve their problems.

"I am deeply concerned about the worth of the results of this experimental service in view of the fact that the manufacturing companies have withdrawn from their program, which was to provide suitable equipment to make the experiment worthwhile, thereby leaving these certificated carriers with no equipment suitable and left to the resources of obsolete or such other equipment as they can get," said CAB Member Ryan, adding: "It seems to me the whole program is in danger of jeopardy or difficulty unless something is done to solve the equipment problem."

One airline spokesman has expressed the view that it is up to the CAB, to a great extent, to solve this problem by certificating enough feeder mileage to create a market for which manufacturers might find it economically feasible to design and build special feeder-type aircraft. The Board itself can't decide what should be done about the matter, although its members freely state something must be done unless the feederline experiment is to be discontinued and scores of smaller communities left with no air service at all or with only a vague promise of being served someday by a trunkline carrier, none of whom has yet shown any appreciable interest in going into the local feeder business.

Might Delay for Planes

Starting with the assumption that small cities which have airports are as much entitled to air service as are larger cities, the problem is how to go about providing it. Groping for an answer, one member, Ryan, suggested that the CAB might promulgate a policy indicating it would expect feeder companies to begin service only after suitable equipment was available. An airline attorney countered with the argument that this kind of a policy would only cause manufacturers to "sit back" and do nothing further toward development of a feeder airplane.

Here, then, is the dilemma. The feederlines cannot afford to underwrite development and production of the type of plane they need, nor do the aircraft manufacturers have capital to risk on such a project. There is the remote possibility that the government might underwrite development of a true feeder plane, but, meanwhile, many communities that are too close to neighboring towns or that have airport runways too short for DC-3's are being deprived of air service although certificated for feeder service, and most of the feederlines are finding it impossible to break even because they are compelled to operate costly or inefficient equipment.

CAB has a tough nut to crack here.

Hughes Radar for CAL

First airline to follow TWA in announcing adoption of the terrain clearance indicator developed by Hughes Aircraft Co., is Continental Air Lines. Installation in CAL's fleet of DC-3's has already started. Decision to use the flashing-light-and-horn indicator was made just prior to the President's special safety board recommendation that all airlines be required to adopt an electronic terrain proximity indicator.

Uniform Air Freight Tariff Cuts Rates

Official Airfreight Tariff No. 1 was to become effective today, affording the nation's shippers rate reductions amounting to 25%, improved routings, and a more extensive pickup and delivery service than has existed heretofore.

This marks the first time in transportation history that a single uniform tariff applicable to the entire country has been effectuated by a unified segment of the transportation industry.

The tariffs list airport-to-airport charges for the transportation of property between any of the more than 400 cities the 19 participating carriers are certificated to serve, and also quotes rates for pickup and delivery services which extend the benefits of air shipments to more than 2,150 points served through the airline stops.

An important effect of the new tariffs will be the elimination of some of the spread in rates that has existed up to now. Previously, the airlines quoted a variety of ton-mile rates, starting with a highest rate on shipments of 100 pounds or less and ranging downward to the lowest rate on plane-load shipments of 16,000 pounds. There were intermediate tariffs applicable to shipments of 100 pounds, 500 pounds, 1,000 pounds, 2,500 pounds, 5,000 pounds, 7,500 pounds and 10,000 pounds.

These intermediate rates have virtually been abolished. There is one rate now—33c per ton-mile—on shipments of 25 pounds or less moving short distances—which decreases slightly with each added pound of weight through 99 pounds. The 100-pound rate then applies on all shipments, regardless of weight, until the full plane-load tariff becomes applicable.

This does not necessarily "freeze out" the freight forwarders who have gained their livelihood through consolidating small shipments and thus getting the benefit of bulk-shipment rates, while charging the shipper the higher rate which normally would apply to his shipment. Theoretically, a forwarder can still consolidate four 25-pound shipments and profit to the extent of the difference between the 100-pound rate and the 25-pound charges, which in the case of a New York-Chicago shipment would be the difference between $11.52 (four 25-pound shipments at $2.88 each) and the 100-pound rate of $8.50. However, the forwarder can make a profit at this only if he can do the job at less expense than Air Cargo, Inc., can do it for the airlines, which is considered highlv improbable.

Also, the forwarder still might turn a profit by working up 16,000-pound consolidated shipments, but past experience indicates this can be done only rarely by a forwarder.

Effects of the new tariffs, as explained by Fred M. Glass, president of Air Cargo, Inc., are as follows:

"This is the first consolidated tariff of all the certificated airlines in this country, and puts together under one cover all the information which any shipper needs to move freight by air to and from any certificated airline point anywhere in the nation. No longer will individual air carriers' tariffs have to be consulted. No longer on interline traffic will separate rules, separate rates and separate procedures of the carriers participating in the movement have to be individually examined.

"Instead, the shipper will have a nationwide integrated air freight transportation system; he will have his choice of airport-to-airport service, door-to-door service, or any desired combination of pickup on the one end and/or delivery on the other. He will have one company to look to for expeditious handling of his traffic; one company to which he can look for tracing; one company to which he can look for claims; one company to which he can look for information, and one company to which he can look for any other function or responsibility necessary to the expeditious shipment of property by air."

Copies of the new tariffs have been distributed to some 20,000 shippers. Standard forms and procedures manuals and claim manuals have been put into use by all the airlines. Air Cargo, Inc., already has negotiated uniform contracts for pickup and delivery services in most major cities, and pending completion of this step on a nationwide basis the cartage contracts of the individual carriers will remain in effect.

Airlines participating in the new tariffs are: American, Braniff, Chicago & Southern, Colonial, Continental, Delta, Eastern, Inland, Mid-Continent, Monarch, National, Northeast, Northwest, PCA, Pioneer, Southwest, TWA, United, and Western.

PAA Reelects Directors

The following directors of Pan American Airways were reelected at the annual stockholders meeting on July 17: Charles F. Adams, Harold M. Bixby, Prescott S. Bush, Howard B. Dean, S. M. Fairchild, Henry J. Friendly, Franklin Gledhill, John W. Hanes, Robert Lehman, E. O. McDonnell, Mark T. McKee, Samuel F. Pryor, W. H. Standley, Vernon F. Taylor and Juan T. Trippe.

DC-4's Replace Boeing 307's

After 20,000 hours in flying in seven years of service, three Boeing 307's on Pan American Airways' Miami-Havana route have been replaced with DC-4 equipment. The old Boeings, first transports with pressurized cabins, carried 33 passengers and a crew of six. In their seven years of service, they carried half a million passengers over 10,000,000 miles without a mishap. TWA is still using its 307's.

Forwarders Battle Against Airlines' Freight Tariff

The consolidated airfreight tariff proposed by the scheduled domestic airlines is unlawful, "unjust, unreasonable, preferential and discriminatory," and should be suspended and investigated, the Air Freight Forwarder Association told the Civil Aeronautics Board last month. AFFA represents 23 independent forwarders.

The tariff ignores the difference in handling costs between small and large shipments and fails to "provide a lawful rate for either a DC-3 or a DC-4. . . ." the petition said. The 16,000-lb. rate-break point provided in the tariff discriminates against the shipping public and denies many smaller cities the opportunity of obtaining plane-load rates, it added.

If the new tariff is correct and reasonable for a 100-lb. shipment, it must be unreasonable and unlawful for a 15,999-lb. shipment which will move at the same rate, AFFA said, charging also that the tariff provides for "substantial increases" over present rates for loads between 3,000 and 16,000 lbs. This weight range, it said, is the "area where the non-certificated cargo carriers are most effective and yet the present rates are already substantially higher than competitive rates."

The rate structure in question (above 100 lbs.) was "designed and published for the primary purpose of destroying the opportunity for air freight forwarders to use the services of the scheduled airlines," AFFA claimed. It said that the actual effect of the new tariff will be to accord a greater spread than heretofore enjoyed by forwarders for shipments between 25 and 99 lbs. and at the same time increase charges for shipments between 3,000 and 15,999 lbs.

Pointing out that complete suspension of the tariff would deny to the public certain rate decreases, AFFA suggested that CAB allow the decreases and suspend only the increases, or allow the decreases only for a trial period during investigation.

Freight Forwarder Case Closes

The Civil Aeronautics Board's marathon freight forwarder case, in which almost 80 applicants asked to be certificated as indirect air carriers, closed July 18 after five months of hearings. The record amounts to 9,000 pages (a complete transcript would cost $2,700). Briefs were to be submitted to Examiner J. Earl Cox by Aug. 1.

Challenger Joins ATA

Challenger Airlines Co., of Salt Lake City, successor to Summit Airways Co., has been admitted to membership of the Air Transport Association. The feederline has routes in Montana, Wyoming, Utah and Colorado.

Aviation Calendar

Aug. 7-8—Institute of the Aeronautical Sciences annual summer meeting, Los Angeles, Ambassador Hotel.

Aug. 7-8—National Flying Farmers Association 1947 convention, Oklahoma A. & M. College, Stillwater.

Aug. 16-17—Oakland, Calif., Air Show, 20th anniversary of Dole flight, auspices Junior Chamber of Commerce.

Aug. 21-22—SAE West Coast Transportation & Maintenance Meeting, Biltmore Hotel, Los Angeles.

Aug. 30-Sept. 2—National Air Races, Cleveland.

Sept. 8-12—Instrument Society of America, second annual conference and exhibit, Hotel Stevens, Chicago.

Sept. 15-17—Air Force Association first annual convention, Columbus, Ohio.

Oct. 2-4—SAE Autumn Aeronautics Meeting, Biltmore Hotel, Los Angeles.

Oct. 3-4—Arizona State Aviation Conference, Douglas, with Arizona Airmen's Association.

Oct. 26-28—National Association of State Aviation Officials, Ft. Worth, Tex.

Nov. 4-7—National Airport Show and Institute, Municipal Auditorium, Cleveland. Sponsored by Air Foundation and National Aeronautic Association

Nov. 19-22—Fifth Annual National Aviation Clinic, Springfield, Ill., State Capitol.

Dec. 1-3—SAE Air Transport Meeting, Hotel Continental, Kansas City, Mo.

International

Aug. 11—IATA Traffic-Tariffs and Schedules Sub-Committee, Paris.

Aug. 16—ICAO Communications Working Committee, Mexico.

Aug. 21—IATA Financial-Insurance Sub-Committee, Paris.

Aug. 25—IATA Financial-Accountancy and Statistical Sub-Committee, Paris.

Aug. 28—IATA Financial-Clearing house Sub-Committee, Paris.

Sept. 1—IATA Technical Conference, Nice.

Sept. 3—IATA Financial Committee, Brussels.

Sept. 6—Institute of the Aeronautical Sciences and Royal Aeronautical Society, joint conference, London, England.

Sept. 16—IATA Technical Committee, Nice.

Sept. 17—ICAO Meteorological Division, Montreal.

Sept. 23—ICAO Aerodromes Air Routes and Ground Aids Division, Montreal.

Sept. —ICAO Special Airworthiness Meeting on Temperature Accountability, Europe.

Oct. 6-20—IATA Executive, Traffic, and Third Annual General Meeting, Rio de Janeiro and Petropolis.

Oct. 15-18—2nd Annual Air Conference, Montreal Board of Trade, Montreal, Canada.

Oct. 20—ICAO Meeting on Multilateral Agreement on Commercial Rights, Petropolis.

Oct. 20—Annual Meeting, Air Industries and Transport Association of Canada, Gray Rocks Inn, St. Jovite, Quebec.

Nov. 18—ICAO Search and Rescue Division, Montreal.

Nov. —ICAO Special Airworthiness Meeting on Definition of Altitude, Montreal.

Nov. —ICAO Special Joint Meeting on Navigation Lights, Montreal.

State Airlines Takes CAB Feeder Decision to Court

State Airlines, Inc., unsuccessful applicant for feeder routes in the Southeastern states case, has appealed the Civil Aeronautics Board's decision in the U. S. Court of Appeals for the District of Columbia, protesting against award of routes to Piedmont Aviation, Inc.

State claims that despite its favorable recommendation by both the examiner and public counsel, CAB's final decision awarded Piedmont much of the route mileage applied for by State in Virginia, North Carolina, West Virginia, Ohio and Kentucky. CAB had no jurisdiction to issue Piedmont a certificate for certain routes because Piedmont had not applied for such routes, State said. The company has also asked CAB to postpone issuing a temporary certificate to Piedmont.

American Hopes to Retire All DC-3's by Next April

American Airlines expects to retire all of the company's DC-3's by April of next year in favor of the Convair 240 and the DC-6.

O. E. Hamm, director of purchasing, announced that two 28-passenger DC-3's have been retired and that within the next month 50 more 21-passenger DC-3's will be up for sale. Price begins at $12,000 with 8,000 hours since overhaul and an additional $6 is added to the purchase price for each hour under the 8,000 minimum with maximum $35,000 for the 21-passenger planes. The 28-passenger jobs go for $20,000 as is. Sales agent is Charles Babb, 444 Madison Ave., N. Y.

Ryan Named to Ansett Board

Thomas Fortune Ryan III of San Francisco has been named a director of Ansett Transport Industries Ltd., an Australian holding company whose subsidiaries include Ansett Airways.

25% First Flighters

About one-fourth of the nation's air travelers are "first flighters" and almost one-third are women, according to a sampling of 1,100 questionnaires just completed by United Air Lines. Approximately 75% were traveling on business or combination of business and pleasure, 23% solely for pleasure, 2% for emergency reasons.

Sex: 70% were male, 30% female, with 16% of the latter on business trips.

Age: 79% were over 30 years, 48% over 40, 24% over 50.

Income: 58% indicated incomes over $5,000, 39% reported incomes under that mark.

Dawson Leaves Safety Bureau For AAF Weather Project

Wallace S. Dawson, CAB Safety Bureau director for nearly a year, has resigned to accept a colonelcy in the Army Air Forces where he will be associated with Col. Joseph Duckworth, former CAB safety head, in the AAF's all-weather flying project. John M. Chamberlain, assistant director, has been appointed acting director of the bureau. CAB sources indicated that Dawson would remain as a consultant to the board and the President's air safety investigating group as long as his services were required.

Seats for Smithsonian

Four seats each from an old Consolidated Commodore flying boat, a twin-engine DC-3 and a four-engined DC-4 will soon be installed in the aviation section of the Smithsonian Institution in Washington. Supplied by Pan American Airways' Latin American Division headquarters at the Smithsonian's request, the seats will illustrate the development of air transport seating equipment from the earliest transport planes to the present and also will be available for visitors to sit on.

Coming and Going—United Air Lines' new arrival and departure board at Washington National Airport is transparent so that travelers may read the information without blocking of their vision to the airport beyond. Passenger agent Bill Hall is shown painting in an arrival time.

Eastern, National Ask More Mail Pay

National Airlines and Eastern Air Lines have joined the ranks of carriers requesting higher mail pay from CAB, the latter being the third of the so-called Big Four to apply. United applied about a month ago and TWA before that.

At this writing, all the domestic air lines not now operating under temporary mail pay rates had petitioned the Board for higher mail rates except American, Northwest and Delta.

Neither Eastern nor National named a specific rate that it considered to be "fair and reasonable," although each made certain suggestions to the Board. Eastern, one of the most consistent earners in the industry, suggested that "60c per ton-mile would today be the absolute minimum which could be suggested," and the company reserved the right to amend its petition to name a higher figure if analysis of current operations should indicate a greater need.

Eastern's current mail rate is 45c per ton-mile, a "service" rate set by the CAB in 1945 on the basis of operating statistics for the year ended May 31, 1945, during which period EAL had an 86.33% load factor. Recently, the petition said, the line's load factor has dropped below 60%, and this decline in traffic has occurred in the face of rising costs and "an enormous amount of duplicative competition."

EAL asked for higher mail rates to be applied to its domestic Routes 5, 6, 10 and 47, planning to file later for mail rates for its Miami-San Juan and New Orleans-Mexico City routes.

National, currently operating on the standard 60c per ton-mile "service" rate paid to a number of medium-sized carriers, said it believes "that a rate based on a 'minimum poundage factor' of 500 pounds per revenue mile would be fair and reasonable for its operations for the period beginning May 1, 1947."

Mail rate load and yield statistics included in the rate petition disclosed that during the first five months of this year NAL's average mail load declined from a high of 142 pounds per mile to 107 pounds per mile. Yield to the carrier under the 60c rate was 4.26c per mile in January, 3.81c per mile in February, 3.90c per mile in March, 3.56c per mile in April, and 3.06c per mile in May. National said it regarded this yield as one of the lowest in the industry.

NWA-REA Express Agreement

Air express service has been extended to Tokyo, Seoul, Shanghai and Manila under an agreement between the Railway Express Agency and Northwest Airlines. Rates will range upward from 1.80 per pound.

Capital Airlines Cites Operating Difficulties

Higher costs and special operating difficulties are two handicaps of short-haul airline operations which make it difficult for the carrier to prove efficiency and economy, Capital Airlines said in a special report filed recently with the Civil Aeronautics Board.

Filed in response to the Board's order opening an investigation of Capital routes, finances and operations, the report suggested higher mail pay, possibly higher passenger fares, and certain route modifications as means by which the CAB could help the carrier through its present difficulties.

Discussing effects of short-haul operations, Capital pointed out that it has to make 63.6 stops per 10,000 miles flown, or 57% more than the 40.5 stops made on the average by American, Eastern, United, TWA and Northwest, its competitors. This means, it said, that Capital's per-mile cost figures must reflect 57% more landings, maneuvering and taxiing, and 57% more wear and tear on its equipment. Also, it claimed, these frequent stops cause average speeds of PCA's planes to be reduced, and ton-mile direct flying costs are increased proportionately.

Furthermore, the report stated, Capital's short-haul system produces an average passenger journey of 230 miles, compared with an average flight of 647 miles for passengers flying with competitors. Also, it was pointed out, because mail, freight and express do not move to any great extent in the short-haul brackets, the airline's loads in these categories are comparatively restricted.

According to the analysis of Capital's present system, 83% of the system traffic last September was concentrated on Route 14 (Norfolk-Chicago) and on the Pittsburgh-New York leg of Route 55. Bad-weather territory through which many of its routes pass brings poor performance factors and lower load factors, it was emphasized.

Tigers' Contract Extended

Air Transport Command has extended the Flying Tiger Line's trans-Pacific contract until Sept. 30. With 35 C-54Es and C-54Gs and 80 flight crews, the Tiger line is flying two daily round trips between Fairfield, Calif., and Tokyo, and two additional daily round trips between Fairfield and Honolulu. Current month-to-month status of the contract is apparently dictated by the appropriations situation. ATC has expressed itself as well satisfied with the Tiger line's contract operation, including both flight schedules and maintenance.

Charges for Meals Aloft

British European Airways Corporation broke with tradition a few weeks ago and started charging passengers for meals served on its services within England and between England and the Continent. Company sources admit that there have been numerous complaints from passengers. Charge on flights out of England is $1 (higher on return trip because of food costs on the Continent). Snacks cost 25c. BEA states that a recent poll of its passengers showed that 70% of them prefer light snacks, rather than heavy meals, when flying.

CAL Carries 300,000 Pounds for Sears in Year

Approximately 300,000 pounds of Sears Roebuck and Co. merchandise of all descriptions was transported by Continental Air Lines during the first year's operation of the Sears "Airborne Telethrift Shopping Service," according to John A. Smith, cargo sales manager for the airline.

This first regular scheduled mail order delivery service was developed last summer by Wade L. Hampton, Colorado Group Manager of Sears, with the aid of his operating superintendent, James E. Peri, and Smith, for the purpose of transporting mail order merchandise overnight to customers in the Colorado Springs, Pueblo and Denver area.

Burla Forms Aircraft Equipment Company

Formation of the Capital Aircraft Equipment Co. was announced in Los Angeles by R. L. Burla, former assistant to the president of North American Aviation, Inc. The new firm will engage in the purchase and sale of aircraft parts and equipment of all types as well as completed airplanes. Burla is presently opening a field office in Sacramento, where he has acquired 3,000 aircraft engines. The new company's main office is at 1434 South Los Angeles St., Los Angeles.

TWA Retirement Plan Promised

A retirement plan for TWA employes will be put into effect as soon as the financial condition of the company permits, LaMotte T. Cohu, president, assured employes in an executive circular distributed recently. Cohu said TWA management is working up a proposal for a retirement plan, which will be effectuated after the company has achieved a profitable financial operation and has set up necessary reserves for replacement of equipment and for business fluctuations and emergencies.

More Feeder Routes Needed by Wiggins

Stating that its present Route 79 is economically inoperable as now constituted, E. W. Wiggins Airways, Inc., has filed applications with the Civil Aeronautics Board asking for additional routes which it says it must have before it can start any service over its New England feeder route.

Service over the present route, which covers only 660 miles and serves 22 points, including 10 stops where airports are unusable, could not be supported except through an unusually high mail pay rate, Wiggins said in its applications for additional mileage.

As requisites for an economically sound New England feeder system, Wiggins asked for: (1) consolidation of its present route segments 1, 2, 3 and 4 into a single segment; (2) a new route segment between Boston and New York-Newark; and a second new route segment from Newark-New York to Berlin, N. H., and Portland, Me. Twenty-seven new route points are included.

Appellate Court Holds In American Aviation's Favor

American Aviation Associates, Inc., publishers of American Aviation Traffic Guide, have obtained from the United States Circuit Court of Appeals, Seventh Circuit (Chicago), a reversal of the trial court's order denying full costs in the copyright controversy with The Official Aviation Guide Co., Inc., Chicago, which controversy was decided favorably to American Aviation Associates, Inc., in 1945.

The trial court last fall, in accordance with the first mandate of the Circuit Court of Appeals, dismissed the copyright infringement complaint of The Official Aviation Guide Company, but denied full costs to the defendant, American Aviation Associates, Inc.

American Aviation Associates appealed from this decision, requesting full costs, certain other damages sustained, and attorney's fees. In its decision just handed down, the Court of Appeals awarded full costs to the defendants, but affirmed the trial court's refusal to award damages and attorney's fees.

UAL Names Key Flights

United Air Lines has gone back to the prewar practice of naming certain key flights for readier identification in advertising and timetable schedules. For example, United's Flight 600 eastbound from San Francisco to New York will be advertised as "the New York." Other flights will be known as "the Los Angeles," "the Pacific Northwest," "the Chicago" and so on.

CAB Briefs

CAB is fighting a losing battle against the stack of applications piling up in its Docket Section. At end of 1938—first year of the Board's existence—137 unfinished cases remained on the docket. By Dec. 31, 1946, the number had risen to 1,112 pending cases; at the end of last month it was approximately 1,175 and still growing.

* * * *

CAB has awarded Pan American Airways a lump sum mail payment of $2,572,000 covering operations of the Alaska Division between Aug. 1, 1944, and Dec. 31, 1945. It equals a rate of 90.36c per mile flown and gives PAA an operating profit of $342,705, return of 7% on recognized investment of $2,211,931.

* * * *

Colonial Airlines' certificates for Canadian routes have been amended to allow service to both Ottawa and Montreal on the same flight. Removal of the restriction will allow more flexible scheduling, a 19% increase in equipment utilization, and better flight crew utilization.

* * * *

Trans-Canada Air Lines' Toronto-Chicago foreign air carrier permit has been modified to include Windsor, Ont., as intermediate point. More direct service between Winnipeg, Manitoba, and Toronto was made possible when CAB authorized TCA to operate via Sault Ste. Marie, Mich., about 100 miles shorter than previous routing.

* * * *

CAB has approved an agreement between American Airlines and United Air Lines relating to establishment of identical scheduled flight times for DC-6 aircraft on certain routes and between certain points.

* * * *

Higher temporary mail rates for Northwest Airlines' trans-Pacific operations have been suggested in a show-cause order issued to the airline, proposing 59c per airplane mile for a 5,100 daily base mileage on operations between Seattle and Minneapolis and Anchorage, Alaska. For services beyond Anchorage to points in the Kurile Islands, Japan, Korea, the Philippines, and Asia, CAB suggested temporary rate of $1.75 per airplane mile for a 5,700 daily base mileage. Northwest has accepted the rates.

* * * *

Colonial Airlines has asked CAB to set a temporary mail rate of $1.00 per airplane mile for its New York-Bermuda, Washington-Bermuda operation slated for inauguration Aug. 1.

* * * *

Investigation of free or reduced rate transportation provided in certain international tariffs by a number of U. S. flag and foreign flag airlines has been begun by CAB. The order opening the investigation states that the carriers involved have filed tariff rules providing free or reduced rate transportation for group tours, tour conductors, travel agents, employes, officials and directors of other carriers, and other persons. CAB will determine whether such provisions are "unjust and unreasonable, or unjustly discriminatory, or unduly preferential, or unduly prejudicial."

Pan American Airways has been authorized to operate non-stop between Wake Island and Tokyo, and between Shanghai and the certificated points, other than Manila, located south of Hong Kong. Adverse weather conditions on the Midway-Tokyo route were cited as reason for the Wake-Tokyo action which provides a route about 567 miles shorter. Airport limitations on four-engined equipment at Hong Kong underlie the request for by-passing that point.

* * * *

American Airlines has asked consolidation of its routes 22, 4 and a portion of route 5. The application asks consolidation of route 22 with route 4 to make the present route 22 an extension of route 4 beyond the intermediate point Nashville to the terminal point Cleveland. It also asks to consolidate route 25 with route 4 as extended so as to redesignate route 25 points between Cincinnati and Washington as points on both 4 and 25—in effect setting up an extension of route 4 beyond Cincinnati to Washington.

CAB Calendar

Aug. 4—Hearing on application of Pan American Airways to serve Melbourne, Australia on its San Francisco-Sydney Route. (Docket 2881). 10 a. m., e. d. s. t., Room 1302, Temporary Building "T." Examiner Paul N. Pfeiffer. Tentative.

Aug. 4—Oral argument in the Boston-New York-Atlanta-New Orleans Case. (Docket 730 et al.) 10 a. m., e. d. s. t., Room 5042, Commerce Building.

Aug. 18—Hearing on applications proposing helicopter mail service in the Chicago area. (Docket 2384 et al.) Examiner Ferdinand D. Moran. Postponed from July 28 at the request of the Post Office Department.

Sept. 2—Hearing on applications of Braniff Airways and Pan American-Grace Airways for amendment of their Latin American Certificates. (Dockets 2527 and 2622). Tentative.

Sept. 8—Hearing on applications proposing additional California-Nevada service. (Docket 2019 et al.) Examiner Curtis C. Henderson.

Sept. 8—Hearing on Mid-Continent Airlines proposed Minot-Regina extension. (Docket 628). Tentative.

Sept. 29—Hearing on Mid-Continent Airlines Route 26 Amendment Case. (Docket 628). Tentative.

Oct. 7—Hearing on applications proposing additional service to Florida (Docket 1668 et al.) Postponed from Aug. 21. Examiner E. Merritt Ruhlen. Tentative.

Nov. 15—Hearing on the board's Investigation of the Consolidated Air Freight Tariff. (Docket 2719). Examiner Herbert K. Bryan.

CAB Actions

July 9—Board exemption order authorizing Pan American Airways to fly non-stop between Wake Island and Tokyo and between Shanghai and PAA points, except Manila, located south of Hong Kong. (Docket 2928).

July 14—Order setting final mail rates for Pioneer Air Lines, Inc., beginning Aug. 21, 1945. (Docket 2002).

July 16—Consolidation order listing application to be heard in a joint proceeding known as the Addition California-Nevada Service Case. (Docket 2019 et al.)

* * * *

U. S. Airlines' Plans Hampered In Argentina and Australia

By Frank M. Holz

Difficulties with foreign governments are blocking some of the plans of U. S.-flag airplanes for long-range international services. For example, Braniff Airways has not yet gained entry to Argentina and Pan American Airways has been denied landing rights at Melbourne, Australia.

Officials of the Argentine chosen instrument airline Flota Aerea Mercante Argentina (FAMA) are reported to be delaying formal selection of routes to the U. S. in order to "sabotage" the U. S.-Argentina air agreement negotiated last April by CAB Chairman James M. Landis and then Ambassador George Messersmith.

FAMA is now active in developing European services and can afford to wait to establish U. S. routes. This past month FAMA inaugurated a scheduled weekly service between Buenos Aires and Rome, Italy. The airline has been operating to Madrid, Paris and London for several months, as well as international services in South America.

Meanwhile U. S. carriers are blocked in their plans for Argentine services. Braniff Airways is unable to plan for operation to Buenos Aires. As this is the southernmost terminal of the airline's Latin American route, Braniff can be occupied for some time in establishing services to other Latin American points. Pan American Airways are currently affected, however. They are limited to present frequencies until the bilateral agreement takes effect.

PAA has so far been denied access to Melbourne on the southern coast of Australia. Flights now end at Sydney, midway on the east coast.

This denial is regarded as a breach of the U. S.-Australia agreement of last Dec. 3 which provides in its annex that the U. S. airline may proceed beyond Sydney to Melbourne whenever any other international airline is allowed to do so. Australian National Airways has been using Melbourne as the actual terminal for its services to San Francisco and Vancouver, although "officially" its trans-Pacific terminal is Sydney. ANA timetables, however, have been carrying Melbourne arrival and departures for the "overseas" aircraft operating via Sydney.

TACA Plane Fleet Flown Out of Colombia

Almost the entire fleet of TACA de Colombia was flown out of Colombia in a surprise maneuver attributed to TACA Airways, S. A., Panamanian holding company of which Waterman Steamship Corp. has effective control. Four of the airline's five DC-3's were flown to Central America, reportedly to the Costa Rica shops of the TACA system.

TACA de Colombia has been in financial difficulties for sometime. Among other things, it is said to owe the Pan American Airways affiliate Avianca for landing fees.

As TACA Airways holds only 45% interest in the Colombian firm and so is unable to control its operations, it is pointed out that TACA Airways and Waterman interests could have seized the transports to safeguard their investment.

Current advertisements of TACA Airways show routes southward to Balboa only. Routes of TACA-name airlines in Colombia and Venezuela are no longer included. Waterman and TACA Airways publicly include in the TACA "system" only those airlines in which the Panamanian holding company has a majority interest. This approach suggests that TACA is again primarily a Central American enterprise. Financial troubles, sale of affiliates and general retrenchment have cut the TACA network almost back to the Central American nucleus with which expansion started several years ago.

Dove Engine Trouble Denied

The de Havilland Engine Co. Ltd. of England flatly denies that the Dove feederline transport has had any trouble with its de Havilland engines as attributed by CAB Chairman James Landis to a report by Livingston Satterthwaite, U. S. civil air attache in London. The firm writes: "The report is untrue, in that the de Havilland Company has never experienced a connecting rod failure with the Gipsy Queen-70 engine, which is the power unit of the Dove aircraft."

Regularity

Regularity of service? There's nothing to it, say British Overeas Airways Corporation representatives in Baltimore.

Operating three round-trip schedules weekly plus extra holiday schedules, between Baltimore and Bermuda, BOAC during the first six months of this year achieved a record of no cancellations and completion of 98.9% of all schedules in both directions on time.

Figures for the Baltimore-Bermuda service from Jan. 1 through June 30 show that 87 round trips were flown, and that 2,910 passengers were flown to Bermuda, 3,271 from Bermuda.

Three Boeing 42-ton flying boats —Berwick, Bangor and Bristol— are used in the Baltimore-Bermuda service.

International Briefs

Tasman to Buy 4 Solents

Tasman Empire Airways will purchase four Short Solent flying boats within the next 12 months at a total cost of about £1,000,000. The airline operates one route between New Zealand and Australia and is jointly owned by interests in the two Dominions and the United Kingdom.

650 Passengers Daily at London

At London Airport (Heathrow) the average daily number of commercial air passengers during May was 650. This included traffic carried by both scheduled airlines and charter companies of about a dozen countries. British Overseas Airways Corp. and British South American Airways Corp. carried about 22.5%. During the same month, the average daily number of passengers on scheduled airlines only passing through Washington National Airport was 4,050, through San Francisco, 2,667.

BOAC Reports 94% Load Factor

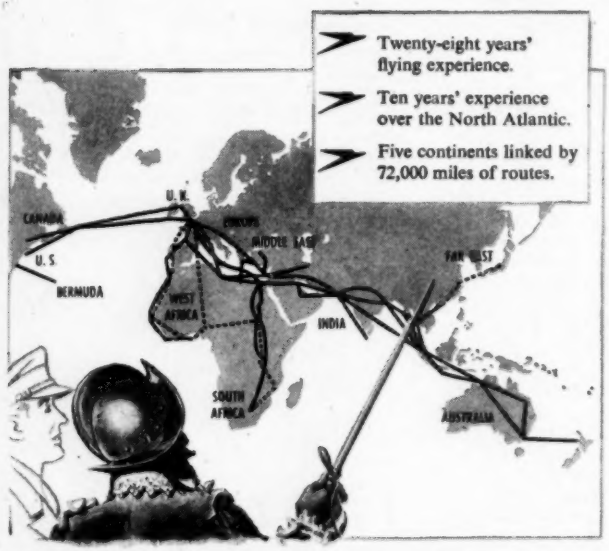
Eastbound flights of British Overseas Airways Corp.'s trans-Atlantic service operated at a load factor of 94 percent in June. Until the recent addition of a second weekly flight out of Montreal, load factor from that city was 100 percent.

Saudi Arabia Buys DC-3Cs

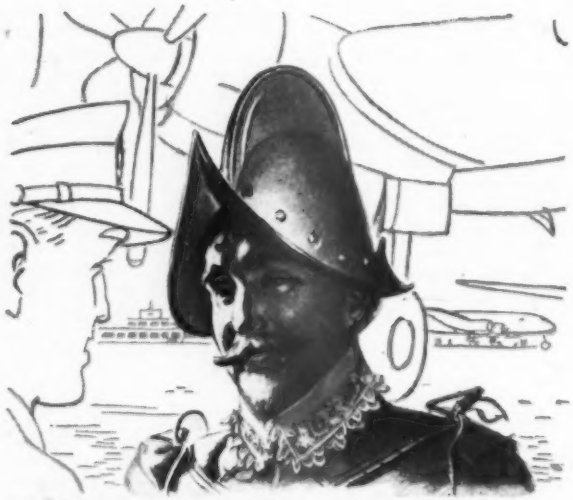
The Kingdom of Saudi Arabia has received two special Douglas DC-3C executive transports outfitted for 15 passengers. The regular DC-3C executive seats 18. The Shah of Iran is now taking flight instruction on the Boeing B-17 converted into an executive aircraft for the ruler.

"Certainly, Sir Francis we'll ship your doubloons in advance."

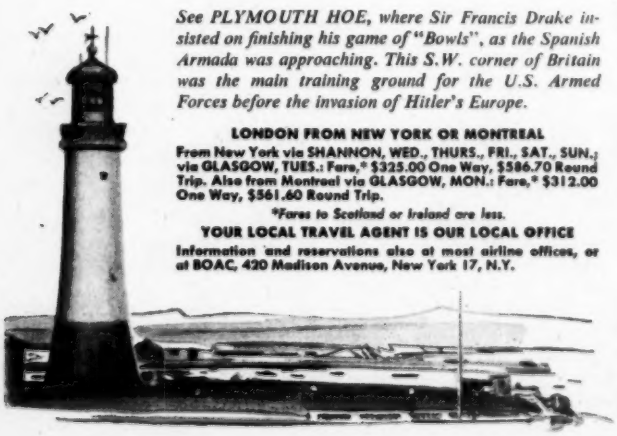
"NOT TREASURY FUNDS, Sir Francis Drake? No, *'personal* property'. . . quite . . . I understand! We have, you see, flown many tons of gold and precious goods over the Atlantic. But these, as heavy *private* baggage, we'll ship ahead of you, as we often do for our Speedbird passengers."



"AS THE FIRST ENGLISHMAN to sail right round the world, you'll be interested in this map. Nearly three years, wasn't it, that ocean voyage took you? And today, from New York, we can put you down into Australia in just four days and a bit! Yes, Sir . . . it's a small world by Speedbird."



"OVER UNCHARTED SEAS you sailed as a pioneer, Sir. In the same pathfinding spirit, BOAC was first to fly the present, *direct* North Atlantic route as a two-way, all-year-round air service. That was back in 1941; and now sixteen Speedbird Captains have logged more than 150 transatlantic flights apiece."



See PLYMOUTH HOE, where Sir Francis Drake insisted on finishing his game of "Bowls", as the Spanish Armada was approaching. This S.W. corner of Britain was the main training ground for the U.S. Armed Forces before the invasion of Hitler's Europe.

LONDON FROM NEW YORK OR MONTREAL

From New York via SHANNON, WED., THURS., FRI., SAT., SUN.; via GLASGOW, TUES.: Fare,* $325.00 One Way, $586.70 Round Trip. Also from Montreal via GLASGOW, MON.: Fare,* $312.00 One Way, $561.60 Round Trip.

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OVER THE ATLANTIC . . . AND ACROSS THE WORLD

SPEEDBIRD SERVICE

B·O·A·C

BRITISH OVERSEAS AIRWAYS CORPORATION

PERSONNEL

★ ★ ★ ★

Administrative:

Frederick G. Betts, veteran of 19 years' service with TWA, has been appointed assistant to LaMotte T. Cohu, president. His duties will be chiefly administrative, devoted generally to system matters. He has been serving as assistant to the executive vice president since last October.

T. Lee, Jr., who has had long experience in vocational education, has been named director of education and training for United Air Lines as part of integration of UAL's regional personnel office and education service division at Cheyenne. He also will serve as manager of personnel for company's Cheyenne maintenance base. With UAL since 1928, Lee organized the Boeing School of Aeronautics formerly operated by the airline at Oakland and has been active in the company veterans' training program. **D. B. Woodyatt** continues at Cheyenne as superintendent of education and training, while **T. H. Showalter,** formerly regional manager of personnel at Cheyenne, has been transferred to San Francisco as assistant western regional personnel manager.

Col. Samuel C. Dunlap, III, co-founder and executive vice president of Slick Airways, has resigned from the company to establish his own business as aeronautical consultant in San Antonio, Tex.

Charles P. Graddick, former air cargo director for United Air Lines and one of the earliest proponents of air freight and air mail, has been appointed to the management staff of Slick Airways. Graddick, designated as assistant to the president of the air freight line, was superintendent of the air mail service for the Post Office Department for seven years prior to joining United in 1940. His appointment is part of Slick's plan to strengthen its staff in preparation for transition from contract carrier status to that of a common carrier, pending CAB approval, on Aug. 1.

R. H. Harrell, who has been assistant to J. H. Carmichael, Capital Airlines executive vice president, has left the company.

Marien E. A. L. deJong has been appointed commercial manager for the North American Division of KLM Royal Dutch Airlines. He was formerly general manager for KNILM Royal Netherlands Indies Airways in New York.

Robert E. Wieland, special representative of National Airlines in Cuba, has been elected treasurer of the Air Transport Association of Cuba, recently organized after the pattern of the Air Transport Association of America.

Thomas O. English, formerly assistant treasurer in charge of Contract Air Cargo Division accounting for American Airlines, has been elected an assistant treasurer of American Overseas Airlines.

Richard C. Lounsbury

Grant Titsworth, who joined American Overseas Airlines' planning department in 1946, has been named an assistant secretary.

Traffic and Sales:

Richard C. Lounsbury, who joined Pan American Airways in 1929, has been appointed general traffic manager and will report to Willis G. Lipscomb, recently named vice president-traffic and sales. He has been assistant general traffic manager since last September.

Clarence P. Green of New Orleans has been designated executive traffic assistant of TACA Airways System, and will direct his efforts toward building TACA traffic through Miami and New Orleans as gateways to Central America.

Charles P. Graddick

Robert K. Kinzel, formerly in charge of cargo sales for Pan American Airways, has been named president of A. Johnson Co., Inc., New York importing-exporting firm.

L. A. Cholot, formerly express traffic manager for Pan American Airways, has been appointed vice president of Air Express International Agency. He was with Pan Am for 14 years, in charge of development, promotion and sales of international air cargo and express. With AEIA he will serve in an advisory capacity and assist in development of company's business as forwarding agent, customs broker, airline and travel agent.

David A. Lawrie, former supervisor of stewardesses for American Airlines in New York, is now reservations manager in San Francisco.

M. L. Anderson, former Braniff Airways general traffic manager, has been appointed Chicago area sales manager for Slick Airways, Inc. Anderson was associated with Railway Express Agency in three states for 15 years before joining Braniff.

Eric Alvord and **Dan Connell** have been named traffic representatives in Western Air Lines' Seattle office: **May Seitsema** has been made senior counselaire, and **Rolly Ellis** is ticket agent. In the new Portland office, **Jack Rogers** and **Jerry Sechser** are traffic representatives, **Sally Reid** and **Virginia Nichols** are counselaires, and **Lee MacDonald** is ticket agent.

Operations-Maintenance:

James B. Lambert, assistant manager of operations for American Overseas Airlines before joining Air France last year, has been appointed superintendent of properties and facilities for the French airline's North American region.

G. R. Edwards, former radio operator for Mid-Continent Airlines at Texarkana, Tex., has been named station manager at the Gregg County, Tex. airport into which MCA inaugurated service July 15.

Frank Parent has been appointed regional superintendent of flight engineers for TWA's western region, with offices at the Los Angeles airport. He has been acting in this capacity for several months.

F. W. Kessler, formerly in Dallas, is now operations manager for American Airlines at San Francisco.

Murl Estes, system chief pilot for Capital Airlines and a 15-year veteran with the company, resigned July 15 to accept a commission as lieutenant colonel in the Army Air Forces.

Delta Air Lines pilot, has been named assistant chief pilot for the company. His new duties call for both administrative work and some cockpit work checking other pilots.

●

William M. Robertson, CAA assistant administrator for foreign operations, has left Washington to return to his former post as regional administrator in Atlanta. No successor will be named, since for economy reasons functions of the Office of Foreign Operations are being transferred to other CAA units on a reduced scale.

Fred M. Lanter has moved from position of regional administrator for CAA in Atlanta to Oklahoma City, where he will direct the CAA Aeronautical Center, national headquarters for training of CAA personnel. He succeeds **Bennett Griffin,** now administrator of Washington National Airport.

F. W. Devlin, CAA program planning officer, has been designated executive assistant to T. P. Wright, CAA administrator, succeeding **F. B. Lee,** recently named deputy administrator.

Walter J. Carr has been named assistant director of the Michigan Department of Aeronautics. He recently returned to the department as chief air navigational specialist and chief pilot after serving in the AAF.

Robert McRae, Washington representative of Douglas Aircraft Co., has resigned, effective Aug. 31. McRae, who is president of the Washington Aero Club, has been in Washington for five years, and before that was with Douglas on the West Coast.

Joseph F. Chalupa has been appointed manager of design engineering of Westinghouse Electric Corp.'s aviation gas turbine division. With the company since 1930, Chalupa will be responsible for the production design of aircraft jet engines.

Old-Timers—W. P. Hoare, United Air Lines' director of maintenance bases, and Don Stombaugh, manager of UAL's Cheyenne maintenance base, exchange congratulations upon receiving three-diamond lapel pins—tokens of their 20 years' service. Both started with Boeing, UAL predecessor company, in Chicago in 1927, Hoare as station agent, Stombaugh as a mechanic.

Airline Commentary

By ERIC BRAMLEY

WE WERE away on a nine-day trip from July 12 to 20, during which time we covered some 9,000 miles . . . The trip included a couple of days in Bermuda and a couple of days in London . . . We were, we are told, the first American to ride from Bermuda to London and back on the experimental flights now being conducted by the British to determine the feasibility of refueling in the air . . . The flights were made in a Lancaster bomber, which was refueled in the air near the Azores by another Lancaster . . . It was quite an experience . . . We expect to give you a first-hand account in the next issue . . .

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M. M. Gouger, TWA's system personnel director, was asked recently to talk on "rumors"—a subject with which the airlines are very familiar . . . "A rumor," he said, "is something which starts out in San Francisco as a sneeze and ends up in New York 15 minutes later as pneumonia. I have been advised that if I haven't heard a good juicy rumor by 10 o'clock in the morning, I ought to start one" . . .

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It seems that once upon a time, not so long ago, Cliff Mutchler, TWA's director of passenger service; Don Magarrell, United Air Lines' vice president-passenger service, and Jimmy Dobbs, well-known airline food caterer, were attending a ground transportation operators meeting in San Francisco . . . At the conclusion of the meeting, Mutchler and Dobbs boarded a TWA flight for Kansas City . . . Came mealtime and the hostess informed Dobbs that he was to be served a special meal . . . So she brought out the lunch and it was a complete United Air Lines meal, with a note from Magarrell to Dobbs stating: "After traveling around with Cliff Mutchler for the past few days, I know how you will enjoy a United luncheon" . . . Mutchler didn't appreciate the gag quite as much as Dobbs did . . . Anyhow, we're glad to see that there are still a few laughs in the business . . . (TWA claims that its luncheon was as good as United's) . . .

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The Swedish airline ABA had a new employe on its ground staff at Ankara, Turkey . . . He happened to see the word "total" at the bottom of a list of passengers . . . Being a conscientious lad, he noticed that no such person had checked in, so he frantically paged "Mr. Total" for several minutes . . . That's what ABA says . . . It could be . . .

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A new foreign aviation journal, Scottish Aviation, has published its first issue . . . Among the articles is one written by a Scot named S. L. M'Kinlay . . . It is entitled "The American Scene" and describes, among other things, his impressions of air travel in the U. S. . . . He seems to have been greatly impressed with the way Americans accept air travel and with the service offered by the airlines—with one exception . . . On a flight in the eastern part of the U. S., he was canceled out at an intermediate stop because weather was bad at destination . . . He says: "For myself, this was only an added adventure, for I was in no hurry and rather welcomed the opportunity of spending some time in a small . . . town, even if it meant a night journey by train for the remaining 270 miles . . . I wondered, too, just how the airline, which hitherto had been a model of efficiency and consideration for the passenger's well-being, would meet the emergency. I was shocked and disappointed to be handed, admittedly without fuss or delay, a check for the unused portion of my ticket. No offer was made to arrange hotel accommodations, no offer was made to book train seats or berths. Not even an apology was forthcoming . . . While waiting for a taxi to take me (at my expense) from the airfield . . . I read again, through different-colored spectacles, a passage in one of the airline company's booklets—'We want to cater to your comfort—to make your trip restful and relaxing—completely convenient in every respect from making your reservation to arriving at your final destination.' In fairness to the company I must admit that when I flew back . . . a few days later everything went like clockwork" . . . Somebody must have muffed the ball somewhere, and consequently a U. S. airline gets some unfavorable publicity abroad . . .

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Overheard at Washington airport: two ladies watching the airplanes, and one says, "Why, flying is not more expensive. . It's cheaper than riding in a Pullman" . . . Sounds like the airlines' advertising has had some effect . . .

* * * *

Thirst Quenchers Popular With Overseas Travelers

By KEITH SAUNDERS

You can get an alcoholic drink now on almost any international airline after leaving the continental limits of the United States, but there's not much chance of getting "high" on a plane except in the very literal sense of altitude.

This is due to the fact that, while the airlines do serve drinks as a matter of catering to the expressed desires of passengers, out of deference to non-drinking passengers and potential passengers the service is hedged about with certain restrictions and limitations.

Most of the carriers have no arbitrary limit on the number of drinks a passenger may have (except for those "on the house"), but stewards, stewardesses and pursers keep pretty close tab on imbibers, and the passenger who attempts to overdo the matter quickly discovers that the bar service is closed.

European airlines served wine and other mild stimulants before the war, but it is only in the past year or so that potables have been available to passengers on American aircraft flying overseas.

"The man who is accustomed to having a social drink or two at home or at his club expects to be able to do so when he travels via first-class passenger accommodations, whether it be on a steamship, a Pullman or an airplane," explained one airline official. "And since we are in the business of selling transportation, we cannot afford to overlook any reasonable item of service which passengers want or expect. And this applies as much to a cocktail or highball as it does to a cup of coffee or a snack."

Accordingly, all the scheduled carriers flying internationally (except Pan American Airways on its Latin American Division and Northwest Airlines on its new Orient service) now serve drinks. The assortments and policies vary, however, with the individual airlines.

KLM Royal Dutch Airlines features genéve, a potent Holland gin that is popular with the considerable proportion of its clientele from the Low Countries, but it also serves cordials, sherry, martinis and manhattans. Casual drinking is not encouraged. The passenger is asked before dinner if he would like an aperitif or cocktail, and is asked after dinner if he desires a cordial, and there is no charge for such service. He is not asked between meals whether he wants a drink, but if he desires one and requests it, he can get it.

Sabena, the Belgian airline, serves wine and champagne free but has whisky and other potables for sale. The free drinks are offered before dinner, but will be served on order at other times. Featured on the wine list is the Sabena cocktail, ingredients of which are 2/3 dubonnet and 1/3 kirsch, the latter being a cherry cordial famous on the Continent. The company says this delightful cocktail is served at only four places—at the Brussels Restaurant in New York, at the Wings Club in New York, at the Palace Hotel in Brussels and on the Sabena planes, of course.

SAS—Scandinavian Airlines System—offers wines and cocktails but makes a specialty of serving aquavit or akvavit, a schnapps that is popular in the Scandinavian countries. Drinks are served with meals, but may be had on request at other times.

British Overseas Airways Corp. has possibly the most diversified bar service of any of the international airlines, offering rum, brandy, scotch, rye, bourbon, gin, sherry, vermouth, port, martinis, old fashioneds, manhattans, sidecars and beer. Prices range from 30c for a bottle of beer to $1.00 for a tumbler of French brandy. On BOAC's New York-London run, highballs sell for two shillings, or 40c, cocktails and wine for the same. On the Baltimore-Bermuda flights, cocktails and wine are 50c, scotch 70c, bourbon and rye 55c, gin 40c and bacardi rum 50c. Drinks are prepared and served by the stewards on order.

B·O·A·C

WINE LIST

SPIRITS

COURVOISIER BRANDY 2/- .40¢
SCOTCH WHISKY 2/- .40¢ SEAGRAMS V.O. 2/- .40¢
BOURBON 2/- .40¢ GIN 2/- .40¢

WINES

SHERRY 2/- .40¢ PORT 2/ .40¢
VERMOUTH FR. 2/- .40¢ VERMOUTH I. 2/- .40¢

COCKTAILS

OLD FASHIONED 2/- .40¢
SIDECAR 2/- .40¢ MARTINI 2/- .40¢
MANHATTAN 2/- .40¢ MIXED VERMOUTH 2/- .40¢

BEERS 1/6 .30¢

GINGER ALE 6d .10¢ SODAS 6d .10¢
LEMON SQUASH 6d .10¢ ORANGE SQUASH 6d .10¢

Air France serves wine or champagne free with meals, charges for drinks served at other times. It has an excellent wine list and serves just the correct wine with each dinner.

Pan American Airways serves scotch, rye, bourbon, rum, martinis and manhattans on its trans-Atlantic flights and on the Pacific run as far west as Honolulu. Cocktails sell for 50c, highballs for 65c. No wines are served. Drinks may be ordered at any time. No drinks are served aboard the planes on Pan Am's Latin American flights, but drinks are available at the Clipper bars at each stop en route.

TWA's wine list offers the thirsty traveler scotch, bourbon, rye, manhattans, martinis and cognac. Cocktails are 50c, other drinks 65c.

American Overseas Airlines at present serves drinks only prior to meals and on short legs of a flight, with an unofficial limit of two cocktails or two glasses of sherry per passenger—all free. Scotch, bourbon and rye will be added to the wine list, probably this week, as also will a beer made in Stockholm.

United Air Lines serves one cocktail free on its San Francisco-Honolulu flights, and stops at that.

Northwest Airlines, which opened its service to the Orient only a fortnight ago, is considering putting a bar service aboard the planes, but has not yet reached a final decision.

On the question of passenger appreciation, all the airlines are agreed that moderate drinking in flight is popular. On American Overseas, for example, nearly everyone has either a cocktail or a glass of sherry before dinner. Generally speaking, passengers drink on planes in about the same ratio as do persons of the same social levels at home. Airline estimates of the percentage of passengers who have one or more drinks on a flight range from 50% to about 85%.

The airlines say that they have the barest minimum of trouble with tippling, passengers being most reasonable and cooperative in this respect.

One thing the airlines avoid is to mention bar service in their advertising. One carrier discovered the importance of this policy when its publicity department sent out a short news release telling of the availability of cocktails and highballs on its overseas planes. Within a few days it began to receive indignant letters from WCTU members and other prohibitionists around the country, denouncing it for making "flying barrooms" of the planes.

Five-Second Service:

American Tries Push-Button Ticketing

A new ticket vending machine designed by the General Register Corporation, of Long Island City, to specifications furnished by American Airlines, is the nearest approach yet to fully automatic or push-button ticketing for all points on a carrier's system.

The first of these machines is now in operation at the Airlines Terminal in New York, and American has contracted with the manufacturer for 250 of them to be supplied to the airline on a rental basis of about $1.50 a day for each machine.

The machine prints, audits and issues a ticket to a passenger, regardless of his routing, in less than five seconds, and General Register estimates that at least this amount will be saved by American in paper and printing costs alone, to say nothing of the speedup in ticket sales and the elimination of previously required daily bookkeeping and ticket stub checking.

The five-second operation prints all the necessary information on the ticket: departure point, destination and stopover cities, whether the ticket is one-way or round-trip, the fare and tax, the day, month and year the ticket is issued, the type of sale (i.e., by cash, a travel plan card, or exchange order), the ticket number, machine number and city code number. The agent has merely to write on the ticket the date, the flight number and the scheduled departure time.

Only three quick moves, with the first two almost simultaneous, are used by an agent to produce the printed ticket. (1) A key is inserted to make the machine operative. Each qualified agent has his own key with his personal number on it. (2) The agent sets an indicator knob which records the type of sale, for the benefit of the auditing department. (3) The agent selects the proper die-printed metal matrix, slides it in the slot, and the printed ticket pops out.

The matrices which operate the machine are racked alphabetically in handy cases near the machine, and through use the agent soon learns to know their place almost instinctively. Tickets are printed in small, compact coupons, each with a carbon receipt attached. One coupon is torn off by the ticket agent and saved for final auditing. The passenger presents the other when boarding his plane, the face copy being removed by the ramp agent and the carbon receipt being kept by the passenger.

The machine is an auditor's dream. As each ticket is issued, the required data is recorded on an auditing tape, in duplicate, automatically making a double statistical record of every sale and providing an easy and complete check at the end of the day or shift. Another timesaving advantage is that fares between points are printed directly on the ticket so that agents will not have to refer to rate books.

American Airlines recently installed another type of automatic ticket vending machine in its Boston ticket office to test its practicability before installing similar machines at other high-volume terminals. This machine issues a printed ticket when a slug is placed in a slot and pushed into the machine in somewhat the same manner as a coin is inserted in an electric juke box. (AMERICAN AVIATION, July 15, p. 25).

Automatic Ticketer—Ticket Agent Jean Thompson (right) demonstrates American Airlines' new automatic ticketing machine to Passenger Ruth Johnson, Bronx, N. Y. The machine, in operation at N. Y.'s Airlines Terminal, prints and issues tickets—one-way, round-trip, or stop-overs—in less than 5 seconds.

PAA-UAL Offer $1,700 Round-the-World Fare

A round-the-world air service with a joint tariff of $1,700, plus $40.60 transportation tax, has been instituted by United Air Lines and Pan American Airways, providing service from any one of the 43 cities on United's transcontinental route.

Passengers may board PAA's planes at New York, flying to London, Istanbul, Karachi and Calcutta, and thence on to Bangkok, Manila, Guam, Wake, Midway and Honolulu, to either San Francisco or Los Angeles. At either of the California points, they may board a United plane for the final leg of the tour back to the city of origin.

The tariff provides for stopovers at any of the points listed on the routing for indefinite periods, so long as the trip is completed in one year.

Traffic Trends

Domestic

United: Revenue passenger miles for first six months of 1947 reported to be 543,882,254, an increase of 19% over same period last year. Air cargo was up 102% over last year to an estimated 7,000,000 ton-miles. Air mail dropped to 4,386,474 ton miles, down 15% from the first six months of 1946. UAL on June 15 flew greatest number of passenger revenue miles of any 24-hour period in its history—4,606,800—and set a new record for passenger traffic on its system during the period June 13-19, when its planes flew an estimated 28,-815,000 revenue passenger miles.

Western: May figure of 19,887,456 revenue passenger miles was up 10% over April figure; 227,119 pounds of air freight, 8% over April; 190,408 pounds of air express, down 14% from April; 841,104 miles flown out of 848,160 scheduled miles for an operating efficiency of 99.17%, a slight increase over April.

Air Express: 320,527 shipments dispatched in domestic airline service in May by Air Express Division of Railway Express Agency, a gain of 8.4% over May of last year.

Pioneer: 5,627 passengers during June flew a total of 1,504,969 revenue passenger miles to surpass previous high of May, when 5,468 passengers flew 1,-455,105 revenue passenger miles. As a result of newly added schedules, Pioneer flew a total of 202,894 scheduled miles in June, compared with 170,371 in May. Operating efficiency was 99.96% of scheduled miles completed.

PCA: All-time record in air freight shipments reported in June. Total of 998,514 pounds was 41,751 above previous record month of April and 345,494 over May. Detroit was top originating point, with 189,683 pounds; New York-Newark second with 172,233, Chicago third with 130,117 pounds.

International

Scandinavian Airlines System: Record volume of passengers and air freight carried to Europe in June, 780 passengers being 106% above April, 17% above May, and 76,532 pounds of cargo being up 42% over May, 123% over April. June load factor was 99.5%. Combined May and June load factor was 99.4%, with 1,447 passengers carried on flights with total capacity of 1,456 seats.

American Overseas: Filled 844 out of 854 available seats, AOA on its eastbound flights during first week in June. Only 10 last-minute cancellations prevented 100% load factor for the week. Incomplete reports on westbound traffic indicated grand passenger total for week may have been 1,700 passengers.

British Overseas: Eastbound flights out of New York in June operated at 94% of capacity, carrying 989 passengers for a 52% gain over May total of 651. Westbound schedules—London to New York—also showed a substantial increase in passenger volume. Operations during quarter ending June 30 showed 276% increase over first quarter.

Brighten your profit picture . . . use the

DOUGLAS 9-POINT SERVICE PROGRAM

SERVICE ANALYSIS

A trained staff of experts investigate, sift, study and report on such factors as parts consumption, trouble analysis, overhaul periods, inspection—all in an effort to improve Douglas planes and our service to you.

SERVICEABILITY

By this term we mean "ease of maintenance." From basic design through a continuous analysis of components and systems, every effort is made to keep you posted on the best and easiest methods of maintenance.

SERVICE CENTER SYSTEM

Already several Centers have been designated throughout the world to provide operators of Douglas Aircraft with reliable sources of maintenance and overhaul work at reasonable cost for top quality work.

This dependable service program saves you time and money... keeps planes flying!

Every hour a plane sits on the ground—it costs you, the operator, money in the form of profits lost. And it may cost you entirely too much money in time wasted and in service poorly rendered.

To help you correct this situation ...to keep planes in a usable condition...is the primary aim of the Douglas 9-point Service Program.

Millions of dollars have been spent by Douglas in constantly improving this Service Program. Special tools have been designed...the most time and money-saving methods for maintenance and service have been painstakingly worked out...skilled men have been trained to help you in the field and to bring you the most up-to-date information of developments at Douglas.

This is *your* program...designed to help you get the maximum profits from the operation of Douglas equipment. You are cordially invited to take the fullest advantage of every phase of the 9-point Service Program.

DOUGLAS AIRCRAFT COMPANY, INC., SANTA MONICA, CALIFORNIA

If you are not taking full advantage of the services offered by Douglas, write for a free copy of our booklet "Service Program for Douglas Transports."

RELY ON THIS DOUGLAS 9-POINT PROGRAM

1. FIELD SERVICE REPRESENTATIVES
2. PLANT SERVICE ENGINEERS
3. ENGINEERING-SERVICE LIAISON
4. SERVICE PUBLICATIONS
5. SERVICE EQUIPMENT
6. MAINTENANCE TRAINING
7. SERVICE ANALYSIS
8. SERVICEABILITY
9. SERVICE CENTER SYSTEM

MORE PEOPLE FLY MORE PLACES BY DOUGLAS

TWA Revises Pass Rules for Employes

New pass regulations for its employes, based on length of service, were adopted June 15 by Transcontinental and Western Air. The regulations restrict complimentary transportation to an employe, spouse and dependent children, if employe is married, and to employe and father and mother, if employe is single.

The allowances range from no complimentary transportation (other than a 50% reduction of regular fare in the event of a family emergency) during the first year of employment to an unlimited annual pass for each member of the immediate family (as defined above) after 20 years of employment.

After one year of service unlimited positive transportation at 50% of regular fare is allowed an employe and members of his or her immediate family, plus the following complimentary transportation:

Braniff Liberalizes Rules

Braniff Airways has liberalized its pass regulations to allow six airline passes per calendar year to all employes who have been with the company a year. Former regulations allowed four passes after one year's service and six passes to employes with two years' service.

The passes may be used by an employe, spouse, dependent children or dependent relatives living with the employe, this being a further liberalization over the old rule. Under the new Braniff free travel regulations, new employes are entitled to two passes after four months' employment, and to two additional passes after eight months' association with the company. Vacation passes are given in addition to the annual allotments and to passes granted in cases of personal emergencies.

One pass good for one trip only and limited to 3,000 miles of travel for the employe and his spouse and each dependent child, or for either his father or mother during the second year with the company; the same number of passes in the third and fourth years, but with the mileage increased to 6,000 miles; two passes for each eligible person with a 6,000-mile limitation per trip from the fifth through the ninth years with the company; the same number of passes with no mileage limitation from the 10th through the 19th years; and an unlimited annual pass thereafter for the employe, spouse and each dependent child.

All the above applies only to transportation within the U. S.; in addition, an employe with more than one year's service will be entitled to a 50% reduction in one way fare to any point on TWA's International Division.

Cargo Briefs

The 453th air shipment of radioactive isotopes was placed aboard an American Airlines plane at Knoxville, Tenn., airport, July 9, consigned to the U. S. Public Health Service in Washington. Although shipments of radio-isotopes from the uranium pile at Oak Ridge began in August, 1946, this was first to be publicized. The substance, widely used in medical research, is generally shipped by air because of its exceptionally short life; radiophosphorus, for example, has a half-life of 14 days, its potency being halved in that period.

* * *

Los Angeles daily newspapers are netting large circulation increases by expanding use of air transportation for shipments. Herald-Express circulation has gone up 50-200% at points to which it has established air delivery routes. The paper recently inaugurated its sixth air delivery route, shipping 1,000 papers daily to Catalina by Amphibious Air Service. Other routes are to San Diego by Western Air Lines, to Las Vegas by Western, to Bakersfield, Visalia, and Fresno by United, to Santa Barbara by Southwest Airways, and to Phoenix and Tucson by American.

* * *

Pan American Airways is moving between five and seven million pounds of avocados from Havana to Miami in one of greatest mass shipments of perishable commodities yet attempted by a scheduled airline. For rest of the summer, four-engined Clippers will shuttle between the two points an average of three times daily to fulfill the contract with Calavo Corporation. Between 250 and 350 flights, each with 10 tons of fruit, will be necessary to complete the shipment, which represents half of Cuba's annual avocado crop.

* * *

Chinese currency—tons of it—is being flown from U. S. to Shanghai to keep pace with the inflation sweeping the latter country. Printed in New York, the currency is flown across the country by the Flying Tiger Line for transfer to Pacific Overseas Airlines which carries it across the Pacific. Last month 14 such flights had been completed safely by the two lines.

* * *

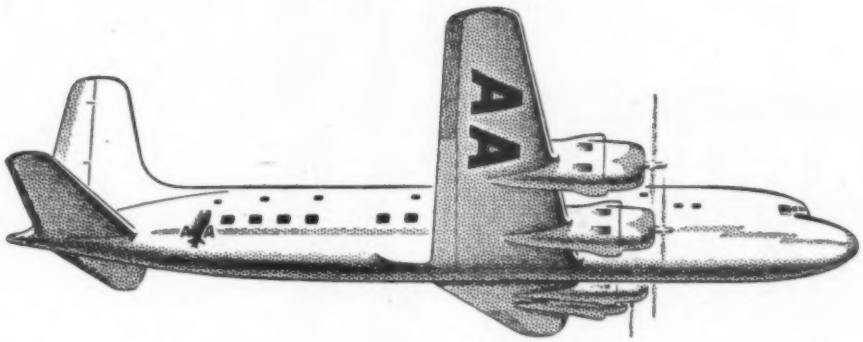
Safety and time-saving were given as reasons for shipping eight tons of silver bullion, valued at $113,000, from Detroit to Bridgeport, Conn., via Capital Airlines. The bullion was purchased from War Assets Administration and shipped to Handy and Harmon, Bridgeport refiners, for refining and resale to manufacturers in the arts and trades field. Extensive preparations were made to guard the shipment while on the ground, but no added precautions were deemed necessary for handling the bullion in flight.

* * *

Trans-Caribbean Air Cargo International division reported 95.1% load factor in both directions during June, with average for first half of year in both directions being above 90%.

American Airlines Leads the Way!

Five Star DC-6 Flagships



Keep American Out Front!

AMERICAN LEADS THE WAY IN EXPERIENCE

- ✓ IN PASSENGERS CARRIED
- ✓ IN FLIGHTS FLOWN
- ✓ IN PASSENGER MILES
- ✓ IN DC-6 SERVICE
- ✓ IN NUMBER OF AIRCRAFT
- ✓ IN ENGINEERING RESEARCH
- ✓ IN PERSONNEL TRAINING

SPEED! American's Five Star Flagship cruises with steady ease at well over 300 miles an hour —and on only 65% of the available horse power of its four powerful Pratt & Whitney engines.

COMFORT! New Altimatic cabin features automatic pressure-control at all altitudes...and complete air-conditioning. A host of luxury features contribute to an entirely new experience in fatigue-free flight.

DEPENDABILITY! American's Five Star Flagship is the most modern product of the knowledge and experience that produced the DC-3 and DC-4—airliners that in 1946 carried 90% of the world's airline passengers.

AA

AMERICAN AIRLINES

New Services:

Western Air Lines was to start its new DC-4 service from San Francisco to the Pacific Northwest on August 1, with three daily round-trip schedules. The schedules will be through flights between Los Angeles and Portland and Seattle.

United Air Lines was to inaugurate its new Boise-Reno cut-off on August 1, putting Boise within 3¼ hours of San Francisco and 6¼ hours of Los Angeles and providing Reno with its first direct air connection with Boise and cities in Washington and Oregon. One round-trip daily will be offered initially.

Mid-Continent was to begin serving Paris, Tex., on its route 80 between Tulsa and Houston, on Aug. 1. Initial service will consist of one flight daily in each direction.

Eastern Air Lines introduced a new Constellation service between Chicago and Miami on July 22, offering two hour and 15 minutes non-stop schedules between Chicago and Atlanta and less than five-hour one-stop trips between Chicago and Miami, via Atlanta. There is one flight daily in each direction. The new service is more than two hours faster than EAL's previous Chicago-Miami service.

Railway Express Agency has inaugurated international air express service from the U. S. to more than 70 Latin American cities served by TACA Airways System. Under the joint handling procedure, shipments originating in the U. S. and consigned to Latin America will be routed to international gateways at New Orleans or Miami for transfer to TACA. Initial schedules provide for daily flights from Miami, via Havana, and twice-weekly flights from New Orleans.

Pan American Airways has inaugurated a semi-monthly round-trip service between New York and Damascus, Syria. Flights leave La Guardia Field every other Wednesday, via Newfoundland, Shannon and London, arriving at Damascus on Fridays. Return flights follow the same route except for a stop at Instabul, Turkey, and arrive in New York on Sundays. Flight time is 23½ hours.

United Air Lines was to open DC-6 service between Los Angeles and San Francisco and the Pacific Northwest on Aug. 1, operating two daily round-trip flights. Cutting an hour off previous schedules, the new service will provide three-hour flight time between Seattle-Tacoma and San Francisco and three hours 20 minutes service from Los Angeles to Portland.

Mid-Continent Airlines inaugurated daily flights into Gregg County Airport which serves East Texas cities of Longview, Kilgore, and Gladewater, on July 15.

Northwest Airlines has added Bozeman, Mont., gateway to Yellowstone Park, as a stop at Istanbul, Turkey, and arrive in

Capital Airlines has opened service to Winston-Salem, N. C., and Memphis, Tenn., these becoming the 55th and 56th cities on its system.

Summary of Feederline Revenues-Expenses for April

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
Empire	$ 39,017	$ 11,213	$ 27,584	$ 124	$	$ 48	$	$ 74,245	$ 41,956	$ 32,289	$ -35,228
Florida	28,288	5,465	22,485	130	. . . .	22	. . . .	42,216	23,161	19,055	-13,928
Monarch	47,002	13,240	33,312	100	313	34	. . . .	89,845	55,388	34,457	-42,843
Pioneer	162,776	63,014	90,372	296	. . . .	302	1,730	134,425	64,299	70,126	28,352
Southwest	85,467	45,476	39,075	570	182	121	. . . .	147,160	60,342	86,818	-61,693*
West Coast	29,443	14,995	14,319	100	. . . .	30	. . . .	38,341	12,252	26,089	-8,898
TOTALS	391,993	153,403	227,147	1,320	495	557	1,730	526,232	257,398	268,834	-134,238

* Amount chargeable to U. S. Post Office Department pending determination of permanent mail rate.

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.

U. S. Feederline Revenues-Expenses for May

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
Challenger	$ 10,793	$ 1,922	$ 6,721	$ 48	$ 7	$ 4	$ 314	$ 41,970	$ 14,611	$ 27,359	$ -31,178
Empire	44,481	15,023	29,308	49	. . .	98	. . .	67,110	36,727	30,383	-23,091
Florida	22,646	5,432	17,031	90	. . .	13	. . .	39,124	21,975	17,149	-16,477
Monarch	48,227	13,716	32,898	1,177	353	74	. . .	99,891	59,960	39,931	-51,663
Pioneer	179,700	68,251	94,541	273	. . .	362	. . .	145,859	68,994	76,865	33,841
Southwest	107,796	61,192	44,751	728	27	151	819	164,167	82,403	81,764	-56,371
West Coast	36,264	19,471	16,609	100	. . .	57	. . .	45,998	16,164	29,834	-9,734
TOTALS	449,907	185,007	241,859	2,465	387	759	1,133	604,119	300,834	303,285	-154,673

NOTE: These figures are taken from monthly reports filed by the airlines with CAB. The data are tentative and subject to later change.

U. S. International Airline Revenues-Expenses for April

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	U. S. MAIL REVENUES	FOREIGN MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	$ 242,283	$ 188,552	$ 3,454	$ 2,494	$	$ 31,960	$ 4,942	$	$ 337,746	$ 179,202	$ 158,544	$ -95,463
Amer. O'Seas	1,443,391	994,708	144,597	112,489	91,884	. . . .	35,299	. . . .	1,748,057	817,931	930,126	-304,666
C & S	67,619	31,273	35,141	. . . .	. . . .	355	850	. . . .	79,741	20,697	59,044	-12,122
Eastern	67,441	61,475	738	. . . .	. . . .	4,324	903	. . . .	80,937	50,327	30,610	-13,496
National	55,111	49,803	369	. . . .	2,345	. . . .	2,595	. . . .	61,670	19,835	41,835	-6,559
Northwest	Data not available; company did not give breakdown between international and domestic routes.											
Pan American												
Latin Amer.	4,520,328	3,123,024	255,697	245,884	663,218	. . . .	112,367	33,707	4,908,032	2,047,069	2,860,963	-387,704
Atlantic	2,929,572	1,813,764	679,475	133,237	196,523	. . . .	32,823	55,037	2,554,283	1,167,439	1,386,844	385,289
Pacific	1,982,570	851,664	871,906	54,493	130,905	. . . .	10,791	. . . .	1,623,385	836,571	786,814	359,185
Alaska	579,659	164,754	381,622	. . . .	24,805	. . . .	2,313	4,081	509,806	241,949	267,857	89,653
TWA	2,168,363	1,491,704	161,805	186,814	210,815	. . . .	54,537	33,377	2,080,025	972,096	1,107,929	88,338
TOTALS	14,066,337	8,770,721	2,534,804	735,411	1,320,495	36,639	257,420	126,202	13,982,682	6,343,116	7,630,566	82,455

NOTE: Data in above tabulations were compiled by American Aviation Publications from monthly reports filed by the airlines with the Civil Aeronautics Board. Figures for American Airlines include that carrier's service to Mexico but not to Canada; for C & S to Havana; for Eastern to Puerto Rico; National to Havana; and Northwest to Alaska. Operations of U. S. carriers into Canada are included in domestic reports to CAB, in accordance with CAB filing procedure.

* * * *

Airlines Make Progress In Cutting Indirect Expenses

The airline industry is making progress toward bringing ground and indirect operating costs more in line with direct flying expenses, according to figures compiled by AMERICAN AVIATION from reports filed with the Civil Aeronautics Board.

The 18 airlines whose costs were surveyed had reduced their indirect expenses by 10 percentage points during the first four months of this year, decreasing from 145% of direct expenses in January to 135% in April.

This reduction in the ratio of ground and indirect costs to direct flying costs was attributable in part to a rise in direct costs, but the major part of the reduction resulted from economies achieved by airline management. Personnel was trimmed through abolition of some jobs and consolidation of others, paper work was reduced wherever possible, and some of the carriers began to set up joint ground operations.

The importance of holding down indirect costs was pointed up in the revenue-expense reports of the domestic airlines for April, latest month on which final figures were available. Ten airlines showed losses on that month's operations, and seven of the 10 would have been in the profit column had their indirect expenses been held down to approximately the level of direct flying expenses. In other words, the amounts by which their ground and indirect expenses exceeded direct expenses were larger than the amounts of their losses for the month.

Significantly, two of the top money makers—Eastern Air Lines and National Airlines—were in the lowest ratio group, Eastern with a ratio of only 106% and National with a ratio of 103%. The three largest carriers—American, United and TWA—were in the high-ratio group, with ratios of 140%, 160% and 155%, respectively.

Included in the category of ground and indirect expenses are the following items: ground operations; equipment maintenance, indirect; ground equipment maintenance, direct; passenger service; traffic and sales; advertising and publicity; general and administrative; and ground equipment depreciation. Thus a much larger percentage of total personnel is charged against indirect operating expenses than is charged against the direct costs of flight operations and maintenance of flight equipment. That is one of the principal reasons indirect costs of the airlines increased by about 700% from 1939 through 1946, at the same time that direct expenses were increasing by about 400%.

Not since 1941 have the ground and indirect expenses of the airlines been approximately equal to direct flying costs, but the ratio has been reduced from a peak of 176% in 1944 and 161% in 1945 to today's level of about 135%.

Ratio of Direct Flying Costs to Ground and Indirect Costs Month of April, 1947

Airline	Ratio	Airline	Ratio
American	1.40	Inland	.94
Braniff	1.23	MCA	1.30
Caribbean	1.46	National	1.03
C & S	1.29	Northeast	1.13
Colonial	1.53	Northwest	1.33
Continental	1.42	PCA	1.20
Delta	1.17	TWA	1.55
Eastern	1.06	United	1.60
Hawaiian	1.24	Western	1.18

WAL Reports May Profit

With total revenues for the month amounting to $1,254,315.19, Western Air Lines showed a consolidated net profit of $143,582.57 during May, as compared with a net loss of $142,920.05 for the same month last year. Operating expenses for the month were $1,110,732.62. Western's improved earnings since early spring are attributed to an increased mail rate, increased passenger fares and an aggressive cost reduction program.

AA to Pay Dividend

The regular quarterly dividend of $.875 per share on the corporation's $3.50 cumulative convertible preferred stock will be paid September 1 to American Airlines stockholders of record at the close of business on August 18.

Revision of Bankruptcy Law Being Studied

Amendment of the bankruptcy laws so as to make airline equipment loans exempt from restrictions against foreclosure during bankruptcy and/or reorganization proceedings is being studied by airlines management at the suggestion of brokers who finance loans on aircraft, aircraft engines, propellers and other airplane parts.

The brokers say such an amendment would have the effect of putting equipment financing for airlines on a comparable basis with the financing of rolling stock for the railroads. The lenders says that if there were no prohibition against foreclosure of liens or chattel mortgages on equipment during possible court reorganization of an airline, they could lend more money on each piece of equipment at reduced interest rates.

California Eases Transport Tax Problem

The California aircraft manufacturers were freed of a legal complexity of long standing when Governor Earl Warren signed a bill passed by the legislature exempting airplanes sold for use in interstate or foreign commerce or by foreign governments from the state use tax. The new law obviates further need of delivering transport planes to the airlines at points outside the state like Las Vegas, Nev.

The California sales and use tax laws have been a thorn to the aircraft manufacturers and the airlines ever since their passage. Two years ago the state's revenue and taxation code was revised to eliminate the sales tax on military and commercial craft, but through a twist in the law only planes sold to the U. S. government were specifically exempted from the use tax. Left open to question on this score were planes sold to foreign governments and transports. Some airlines interpreted the law as freeing them from both the sales and use taxes, but others feared they were still subject to the use tax and most of them insisted upon delivery in Las Vegas which is located in Nevada which has neither sales or use tax.

Planes sold for use within the state of California still are subject to the tax and so are planes sold for personal use. The latter will have to continue to be delivered outside the state to escape the tax.

Industry Flying, Ground and Indirect Costs, and Ratio of Ground-Indirect Costs to Direct Costs (Costs in thousands of dollars)

	1939	1940	1941	1942	1943	1944	1945	1946	1st 4 mos. 1947 Jan.	Feb.	Mar.	Apr.
Direct	$26,694	$35,178	$44,932	$36,392	$34,613	$45,150	$69,223	$129,501	$12,132	$12,027	$12,509	$12,983
Indirect	24,692	35,028	44,987	47,974	60,949	79,372	111,404	192,360	17,558	17,433	16,742	17,480
Ratio	.94	1.00	1.00	1.32	1.76	1.76	1.61	1.48	1.45	1.45	1.34	1.35

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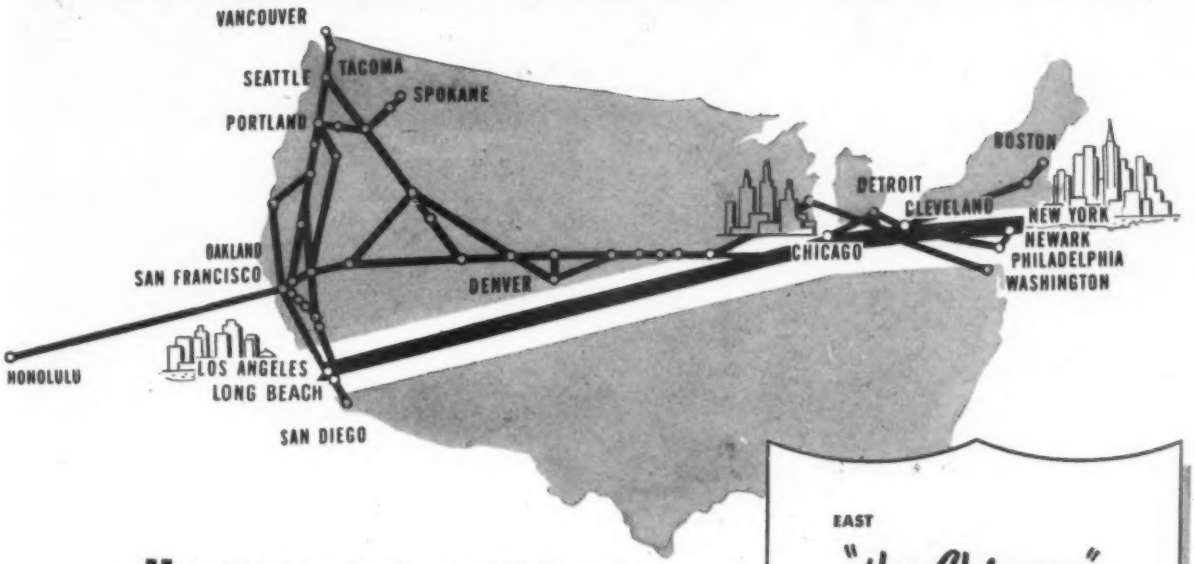

United Air Lines has inaugurated direct service over a new short route linking Los Angeles with Chicago, New York and all the East.

Over this new, vital air route, United's great new Douglas DC-6 Mainliner 300s wing their way at a 5-mile-a-minute clip. Imagine—non-stop flights between Los Angeles and Chicago in 6¼ hours! You can leave New York after the theater in the evening—you're in Los Angeles before 8 o'clock in the morning!

With a background of 20 years of coast-to-coast and Pacific Coast airline operation, United Air Lines is proud of the opportunity to bring to air travelers this new, direct, time-saving service between Los Angeles and the Middle West and East.

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EAST

"the Chicago"

Leaves Los Angeles . . . 8:25 a.m.
Arrives Chicago . . 4:40 p.m. (C.S.T.)
Arrives New York . 8:50 p.m. (E.S.T.)

"the New York"

STARTS AUG. 15
Leaves Los Angeles . . . . 7:15 p.m.
Arrives New York . . . . . 7:55 a.m.

WEST

"the Hollywood"

STARTS AUG. 16
Leaves New York . . 11:30 a.m.
Arrives Los Angeles . . . 7:10 a.m.

"the Los Angeles"

Leaves New York . . . 12:00 noon
Leaves Chicago . . 3:00 p.m. (C.S.T.)
Arrives Los Angeles . . . 8:10 p.m.

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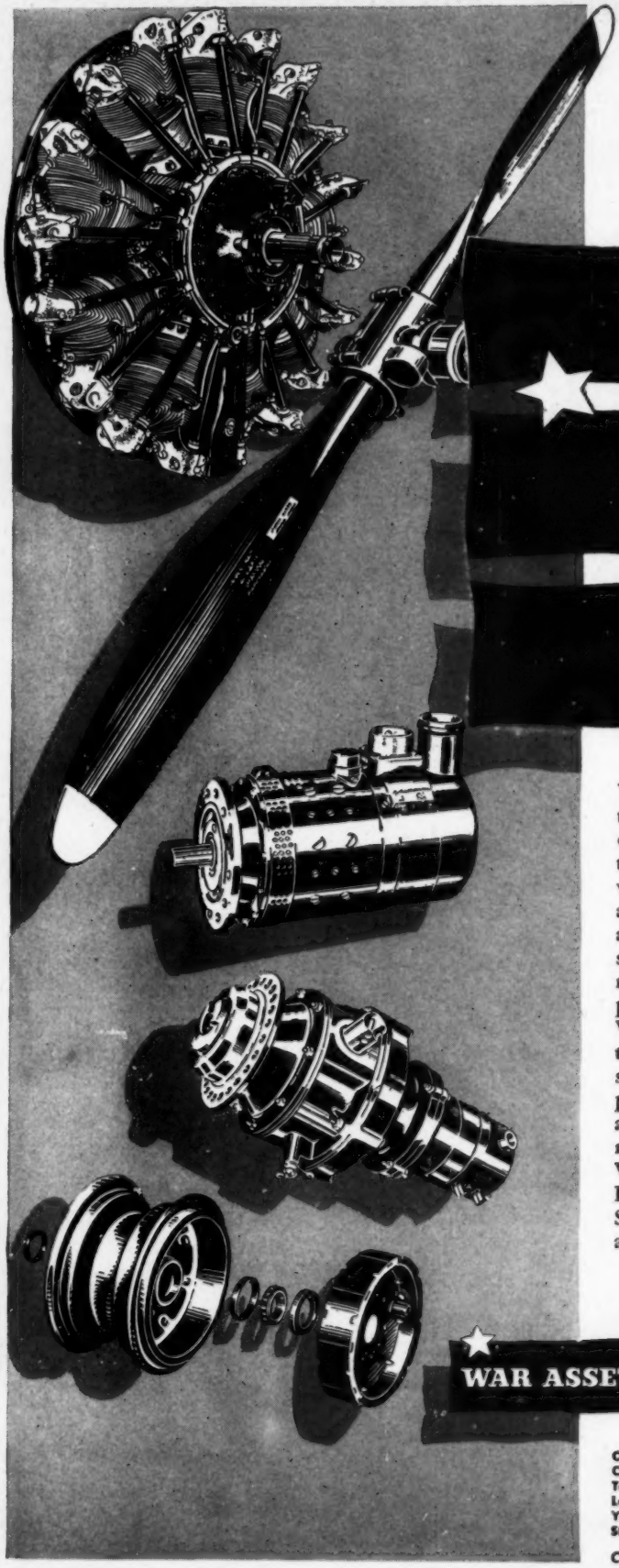

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Radar Safety and Comfort May Attract New Customers

By David Shawe

There has been considerable agitation in Washington this past fortnight for airborne radar and so-called radar warning devices. The CAA may require airlines to install a terrain warning indicator by the end of this year, and a potent group in Congress is campaigning for radar beacon airways and picture-type radar in all commercial planes (see page 13).

I've just returned from spending 12 days and more than 60 flying hours on American Airlines' radar-equipped DC-3 'Alpha.' The trip was intended to develop further evidence that picture radar will reduce the hazards of terrain and the discomforts and hazards of flying through storms. There was incidental research on several other applications of radar. It was a very convincing demonstration.

Easy To Interpret

It has been contended by airline pilots that the airborne radar scope is hard to interpret. Of the wartime sets this was true, but the APS-10 equipment which American has modified (and the still better equipment which can now be ordered from General Electric and Houston) eliminates all ground clutter within a two-mile safety circle around the center of the scope. It clearly outlines all distant targets, but reaches over them as the plane approaches—unless they are above or dangerously near the level of flight.

It seems probable that pilot criticism will fade as more of them get a chance to try the new-type radar equipment. With a brief check out, even a person who could not be classed as an expert on either flying or radar would have no qualms whatever in the co-pilot's seat under instrument conditions if the pilot set a collision course for a mountain and said, "You've got it." The radar tells exactly, and instantaneously, what course to take to avoid that mountain. It will even show a safe pass between mountains.

The radar scope probably gives more information with less interpretation, and with less possibility of misinformation, than any other navigational device ever put in an airplane. As for false information, radar is "fail-safe"—it either works or doesn't work and there are no misleading signals.

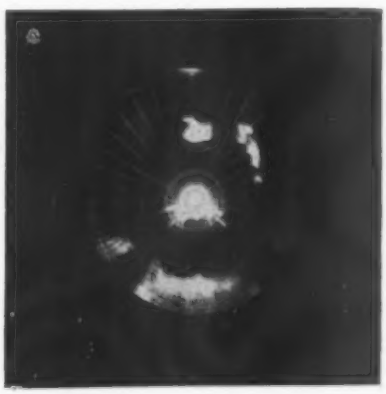
There is no denying that airborne radar, unless subsidized, represents a substantial investment from management's viewpoint, but if the underlying purpose of any airline investment is to attract additional revenues, then airborne radar might well prove a sound investment.

Airlines can make a rough compilation of revenue losses following a serious crash. If the public's tendency to stay away from air travel after a major accident does not add up to enough loss to justify a radar installation program, then the industry can consider that for every customer who is scared away by crash headlines, there are one or two or maybe ten marginal customers who can and often do lose interest in further air travel if they get a good shaking up. Radar could salvage enough of these marginal customers to pay its own way in a very short time.

Radar does not detect turbulence, but it gives a sharp picture of the more serious storm conditions (wherever there are rain or hail particles to reflect the radar) which can frighten not only customers but veteran pilots. Radar shows the shape and extent of line storms or cumulus in which precipitation occurs. It gives the pilot, who otherwise might have no choice but to bang into the invisible heart of the storm, a choice of skirting around the edge of it, flying through at the narrowest point or, in most cases, picking a path through it where conditions are relatively calm.

Found Path Through Storm

Going into Kansas City in American's Alpha we met up with a line storm which reached from horizon to horizon. From the cockpit it looked solid—no reasonable way around it and no holes in the wall. Without radar a pilot would have had no choice but to hold to his course and hope he wasn't hitting it at the worst point. Our radar showed a clearly defined path through the bright storm echo. We changed course to the left and then to the right, entering the storm diagonally at a point several miles from our original course. The path jogged a couple of times going through, and once or twice narrowed almost to the wingtips, but it remained clearly defined. During the time we were on instruments the air was calmer than after we left the storm, and we got



Storm Cloud Ahead—Taken from an altitude of 11,000 feet and a distance of 12 miles, these simultaneous views of towering cumulus clouds show how it looks through the windshield and in the radar scope. Not visible in the windshield picture but clearly defined in the scope is a line of storm clouds off to the right. Pilot could take choice of flying between the cloud formations or swinging off to the left. Shortly after these shots were taken, American Airlines' research ship 'Alpha' was flown directly into the cloud ahead. Turbulence and hail severe enough to frighten a passenger were encountered. At other points on the research flight, 'Alpha' was flown smoothly around or through holes in line storms invisible to the pilot because of darkness or prevailing instrument conditions.

only a few drops of rain on the windshield.

In this particular instance we did not go back to prove it would have been rough without the radar. In many other cases, both with thunderstorms and cumulus, we flew around them, through the edges, and through the center. Photographs of the radar scope and out the windshield will show the course we flew. NACA flight recording instruments carried on the flight will be analyzed to show the relationship between the radar picture and airplane motion. Coordinated with the photographs and flight records is a running commentary by the pilot, Capt. Sam Saint. At several points when we ignored the radar to explore a storm this commentary was interrupted by the sound of severe hail against the airplane—a sound which is not music to either pilot or passenger.

Collision Runs

Out in the Rockies and on the West Coast, runs were made on the sites of several serious airline crashes —including American's and Western's on Laguna Mountain east of San Diego, United's on Elk Mountain in Wyoming, American's at Burbank, and Western's at Newhall north of Los Angeles. At each site runs were made directly at the crash, and then at what the radar showed to be a safe altitude above or away from the terrain. The camera on the remote scope in the radio compartment took a sequence of pictures, and coordinated shots were taken of the terrain as seen by the pilot through the windshield. On each collision run the radar scope plainly warned of the impending danger, and in addition gave the pilot a clear picture of the best course to take to get out of danger.

Perhaps more important than the danger warning is the fact that radar could have kept pilots in these cases from getting even close to danger. Most of them crashed because they thought they were elsewhere. It takes very little experience with the radar to demonstrate that an airline pilot flying the same route will soon learn to identify radar landmarks along the way. It takes no plotting, tracking or radio checking to see by radar that a plane is off the course. It does not take constant study of the scope, but only an occasional glance (which pilots say becomes automatic) to show a pilot when he is approaching mountains, and when he has passed them. He would have to deliberately ignore the radar to get far from his regular route, or to let down before crossing a range of hills.

On this particular research flight American did not work with radar beacons for enroute navigation or low approaches, but there were times when we were off the airways and having radio trouble when a single ground beacon would have saved a lot of time and trouble fixing our position. American's pioneering work with fixed and portable beacons, demonstrating that it can be a simple and error-free method of flying airways and making low approaches, contributed substantially to the Navy's decision to set up beacon airways and equip NATS planes with radar (*American Aviation*, July 15).

In turn, current Congressional discussion of airborne radar and beacon navigation has been prompted by Army and Navy enthusiasm for radar in the face of criticism of the occasional unreliability of omni-directional ranges for navigation and ILS for low approaches.

Perhaps the leading argument for radar beacons along airways and on runways is that the radar return, in addition to being easy to read and interpret, is not subject to distortion, fading, static or improper calibration. When a pilot lines up the two pips marking a runway and the two delayed pulse pips which show up beyond the far end of the runway he can read his exact distance from the nearest pip, and he can be sure that no parked airplane, passing truck or other interference is bending the beam or otherwise giving him a false picture of the location of the runway. The low approach aspect admittedly is still experimental, but the experimenters have found every reason to be enthusiastic.

Position Fixing

When flying a beacon airway the pilot can tell, with a single glance at the scope, the identification characteristic of the beacon, the distance from his position to the beacon, and the course he should fly if he wants to cross the beacon. He does not have to glue the headset to his ears to catch an aural identification, or twist the dial trying to tune in a signal, or puzzle over the meaning of a wandering indicator needle.

American intends to continue research and evaluation with 'Alpha' and with two radar-equipped cargo DC-4's pending fleetwide installation of 'postwar' airborne radar soon to be ordered.

American's research experts who have been responsible for the development program and who accompanied the recent country-wide flight include R. W. Ayer, assistant director of flight engineering; Capt. Sam Saint, manager of air navigation and traffic control development; Lowell Armstrong, engineering co-pilot; Frank C. White, supervisor ANTC, and J. P. Jones and Henry Wallis, engineering technicians. NACA technical observer on the flight was Roy Steiner.

EAL Crash Hearing Ends Without Listing Cause

The second hearing on Eastern Air Lines' crash at Bainbridge, Md., May 30 closed in New York on July 19 without bringing to light any conclusive evidence on the cause. Considerable time during the three-day session was devoted to attempting to show that the ex-C-54 had been seriously damaged during the war, and that EAL's maintenance of the aircraft prior to the crash had ignored pilot complaints of excessive vibration in the airplane.

Eastern was able to establish that the vibration referred to was a rather commonplace DC-4 occurrence during landing gear retraction, that it had been corrected after each pilot squawk, and that it had no apparent bearing on the crash. Evidence that the plane had once been damaged in an Army belly landing on Kwajalein was introduced into the record without specific proof that it contributed to the Bainbridge incident.

A lengthy analysis of the crash was submitted by Sidney D. Berman, aircraft specialist for the accident investigation division, Safety Bureau, CAB. He suggested that an earlier incident, possibly a severe buffeting gust while the plane was on the ground, had sufficiently weakened the tail surface control mechanism—particularly the torque box—that "whipping action" could have developed in flight.

Terrain Indicator Regulation

The CAB has moved rapidly in following the recommendation recently made by President Truman's special air safety board that a terrain proximity indicator be required on all airline planes. Now being circulated for industry comment is a proposed Special Civil Air Regulation with the following wording:

"On or after January 1, 1948, aircraft operated in scheduled air carrier service . . . shall be equipped with one absolute terrain proximity indicator, approved by the Administrator, which will warn the pilot of the altitude above the terrain at altitudes of 2,000 feet, 1,000 feet, and any predetermined altitude between 300 feet and 500 feet inclusive.

Contrary to early reports, this terminology does not stipulate the so-called "Hughes radar," although both this device and the conventional radio altimeter appear to meet the requirements. Two radio altimeters, the RCA AVQ-6 and Raytheon's CX-1100, already have CAA approval and others are considered eligible. Approval has been requested for the Hughes device but action has not yet been taken on the request.

PIA's DC-4s to Be Plush Plus

Peruvian International Airways is out to out-do all competition in making genuine "plush jobs" out of its fleet of Douglas DC-4's.

Conversion of the ships by Aviation Maintenance Corp. at Van Nuys, Calif., is reported to be costing the South American carrier $350,000 or more per plane. Three planes have been completed and delivered and the remaining two are in process of conversion. Additional improvements have been made progressively and in the later planes it is understood Peruvian's equipment investment, including purchase and modification, will reach $500,000 per plane, or more than the price of new ships.

Peruvian's order involves conversion of four Navy surplus R-5D's and one Army C-54A. The modification includes C-54B wing panels and modified C-54E fuel systems developed by AMC and approved by CAA and Douglas Aircraft Co.

The cabin interior will swiftly catch the eye of Peruvian passengers. The decorative color scheme is light blue and beige with additional contrast supplied by fawn-colored Bedford cord upholstery on the seats and the free use of bright metal trim. Overall, the cabin interior comes as close to looking like a de luxe suite at the Waldorf as it's possible to attain in the cabin of an airplane. Women passengers, especially, will like it.

The seats are Warren McArthur's de luxe model, but they've been modified for greater passenger comfort by the addition of a fluffy, down head-rest that's a foot thick. There's a foot rail for long-legged passengers.

Hot meals will come out of the over-sized galley which is equipped with Maxson ovens. The galley has refrigerated storage for 90 meals—two servings for a full planeload of 44 passengers and crew—and the two ovens will turn out 14 meals at a time. Five electric containers hold hot liquids and in addition there is special electric heating equipment to whip up extras, like hot soup, hot chocolate, baby formulas and so on. The buffet, which AMC fabricated and assembled, is highly polished metal, making it simple to clean.

An innovation is the installation of outside hatches for the men's and women's rest rooms so that they can be serviced without entering the cabin, including supplying water.

Peruvian's ships have six ceiling lights, instead of the conventional four or five, for better cabin illumination. These fixtures also are the ventilator outlets. Cabin heat, supplied by two 100,000 B.T.U. heaters, is thermostatically controlled. A separate 50,000 B.T.U. heater supplies cockpit heat.

Since Peruvian travels warm climes it is taking no chances on running short of cool air in the cabin in flight. An extra air scoop has been installed to insure a full flow of cool air to the individual seats.

The last word in Peruvian's plans to make its passengers happy is in-flight movies. Plans now are being made for the installation of projection machines and speaker systems. And then it's going to distribute a one-use tooth brush packet to each of its passengers. The packet contains a small-size nylon bristled brush and a gram of tooth powder done up in a neat, small package.

With all the extras, Peruvian's ships are weighing in empty at a little more than 40,100 pounds as compared to the normal DC-4 empty weight of 39,000 pounds. Actually, the extras mount up to nearly 3,000 pounds, but AMC's technicians accomplished weight savings in other phases of the conversion to balance off the greater share of the added poundage imposed by the South American carrier's specifications for a de luxe craft.

Rules Change Proposed on Pitch and Bank Indicators

Because of the non-availability of sufficiently reliable instruments at this time, the CAB Safety Bureau has proposed that the word "non-upsetting type" be deleted from Sec. 04b.51 of the Civil Air Regulations requiring that all airplanes subject to certification under the airworthiness requirements be equipped with a non-upsetting type gyroscopic pitch and bank indicator. It is felt that for the present, at least, safety would be served better if instruments which are not of the non-upsetting type but which experience has shown to be reliable are used.

Flight Recorders Proposed

A requirement that all scheduled transport planes after June 30, 1948, be equipped with "properly functioning instrumentation to record continuously during flight the altitude of the aircraft and the vertical accelerations to which the aircraft may be subjected" has been proposed by the Safety Bureau of the Civil Aeronautics Board. Flight recorders were required on transports until June, 1944, when the requirement was withdrawn because of material and personnel shortages and inadequacy of the then existing instruments. The Board says adequate recorders are now available, and it feels their use will promote safety.

30 Hour Check

By DAVID SHAWE

The industry has responded rather volubly about new runway and take-off requirements recently recommended by President Truman's special air safety board (*American Aviation*, July 15). At public hearings held after the recommendations were published, present and proposed T category requirements were aired by pilots, airline management representatives, manufacturers and government officials.

The pilots tended to support demands for a new formula for computing take-off weights (4-engine) under various conditions. They did not favor use of a wind component in computing gross weights, but urged that greater consideration be given to temperatures. Lower landing speeds generally were recommended.

Most other spokesmen at the hearings held the view that existing transport regulations adequately cover aircraft performance and runway lengths, contending that no accidents have been traceable to inadequacy of regulations already in force. When the hearings were over there was little indication that the special board might retract any of its original recommendations.

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First airline plane to be delivered carrying the Sperry A-12 autopilot with ILS automatic approach control is the DC-6 recently flown to Europe for delivery to the Belgian airline Sabena. Having had some recent experience with this device, we wish to say that the Sabena pilots are very lucky fellows. The A-12 by itself makes flying a pretty effortless proposition; with the addition of the automatic approach control there isn't much need for muscle between take-off and touch down. There have been reports that on automatic approach the plane will sometimes go on bracketing the localizer beam all the way down to the runway, but no one seems to be certain whether this results from a lag in the servo mechanism, or a meandering beam from the localizer beacon.

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The CAA's seven-page proposed policy on approval of thermal ice protection systems calls for a substantial amount of flight testing before thermal-equipped planes can be flown through icing conditions with passengers aboard (cargo operations have more liberal provisions). While no one particularly questions the importance of proving new thermal systems for performance, structural soundness of heated members, fire protection, etc., some airline operators are rather unhappy at the prospect of receiving new planes like the CV-240 too late this fall to have them tested in time for winter operation in icing areas.

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United Air Lines is reported to have taken over American Overseas' contract to provide DC-4 turn-around maintenance for Scandinavian Airlines System at LaGuardia Field. AOA, however, will continue to help out with some of the shop work needed by SAS.

Experience to Solve Supercharging 'Bugs'

Cabin pressurization and air conditioning, the features which passengers are most likely to notice in post-war airliners, are due for much controversy. Being new and still in the untried stage outside the laboratory, they present the dual problem of operation and maintenance to the airline, and experience alone will iron out all the kinks.

The airlines have standardized on 300 feet per minute as the rate of cabin ascent or descent in the new pressurized planes, but ears will still ring and pop in protest if the flight engineer—or co-pilot—slips up in operation of the equipment. This is one of the principal reasons for the difference in comfort of one airline ride as compared to another.

Pressure control regulators are fully automatic and if the supercharging system is functioning properly the change in the "artificial" atmosphere within the sealed cabin will hold to the prescribed rate without further attention from the flight engineer. The trouble comes from improper pre-settings by the operator. A cabin can be sent into a steep climb or a fast dive through a flight engineer's carelessness.

AiResearch Manufacturing Co., designers and manufacturers of 98% of the cabin pressure control equipment, recently assigned Dick Alexander, their cabin pressure project engineer, to sales and engineering coordination with the airlines. He found the most frequent error is failure to check the regulator setting at the airport level prior to the take-off or coming in for a landing. All altitudes and rates of change are pre-selected so that any error automatically reflects in the cabin pressurization. Similarly, a pilot or co-pilot unthinkingly opening a cockpit window in landing or taking off puts the cabin in a dive or climb.

Maintenance problems currently are centering around the superchargers and the refrigeration units, which are so new as to have almost no record of experience. Because of this AiResearch Manufacturing Co. is making agreements with the airlines for overhaul of the units it manufactures for the first year of operation.

The cabin pressure regulators require little maintenance. Nearly 17,000 of these have been built—including the 15,000 for the Boeing B-29's on which they were first introduced—and experience has proved that they may be operated for 1,000 hours or more before overhaul. For expediency, however, it is probable most airlines will follow the example of TWA which overhauls its regulators at the same time as it make its 750-hour major overhaul of engines.

Planning Pilot

A third man to do the thinking and planning for the two pilots who actually operate a transport plane is favored by some veteran pilots in preference to addition of a flight engineer on all four-engined domestic transport flights.

This suggestion regarding "thinking" captains was brought forth in some of the comments on the Civil Aeronautics Board Safety Bureau's proposal that a flight engineer be added to the crew complement on heavier transports. The suggestion was that this third man be a full captain, chosen from veteran airline pilots, and that he be relieved of all manual duties in connection with the operation of a flight. He would work out problems in connection with the flight, leaving the pilot and co-pilot free to concentrate on flying the ship.

Laboratory tests made by AiResearch indicate a 650-hour overhaul period for the superchargers, but the company intends to overhaul and modernize initial production units at 400 hours. Admittedly this is still an experimental problem and an experience record sufficient to present to the Civil Aeronautics Administration remains for the future. Experience with the AiResearch refrigeration units indicates that overhaul time will be as great or greater than on the superchargers.

One supercharging maintenance problem the airlines will encounter is the variety of equipment. An airline flying, for example, Boeing Stratocruisers, Douglas DC-6's and Convair Liners will have three different types of supercharging equipment to service. Instead of the variable speed drive to pump a controlled flow of compressed air into the cabin as in the DC-6 and the Constellation 649's and 749's, the Convair system employs hydraulic pumps and motors. Boeing in the 377's uses a third method, a turbo bleed system, bleeding off a certain amount of pressure from its turbo-superchargers. Boeing also is using a mechanical refrigeration system instead of the air cycle system used on the DC-6's, the new-type Constellations and the Convair Liners.

"The cabin supercharging troubles that have been and are being encountered are typical of all new aircraft developments," said Alexander. "Like new engines or anything else of new design, there are bugs that have to be worked out. AiResearch has delivered only about 200 cabin superchargers, yet they represent approximately 35% of all the units manufactured in the United States. We've built and shipped approximately 800 turbine refrigeration units and they represent about 99% of the units manufactured in the United States."

Senate Investigator Finds 'Dozen Causes' of UAL Crash

An independent Senate study of United Air Lines' May 29 crash at LaGuardia Field has concluded that there were "about a dozen different causes" of the incident. The study, made by Carl Dolan for the Senate Commerce Committee, concludes that the crash resulted from combined factors of weather, runway, pilot, plane and loading.

In an interim report issued by the committee, Dolan recommends:

(a) the CAA spot-check all load chart specifications and take immediate steps to standardize them; (b) have the dispatching staff, and not cargo handlers and traffic men, handle operations; (c) immediate changes should be made in gust locks to the positive type; (d) establish specific rules regarding changes in runways so that they are capable of handling take-off and emergency landings, combined with an additional factor of safety, computed on the basis of all factors involved.

(e) Give control towers authority to refuse departures for cause, such as weather, runway, traffic, etc.; (f) chart by type all plane emergency landing run data and furnish this data to pilots; (g) in all regulations and changes, give due regard to the human equation, which cannot be computed with a slide rule.

ATA Sponsors 8th Annual Research Competition

The Air Transport Association's annual competition for the best original research by airline employes having a practical application toward improving weather analysis, weather forecasting and dispatching of aircraft will be held this year for the eighth time, with Dec. 31 as a deadline for entries.

Research papers detailing the investigations and conclusions must be sent by registered mail to Secretary, Meteorological Committee, 1107 Sixteenth St., N. W., Washington 6, D. C. There are three cash awards; first prize $250, second prize $150, and third prize $100.

Airline pilots, meteorologists and other operations personnel of ATA member airlines are eligible to compete, but not chief pilots, chief meteorologists and other supervisory personnel.

FIDO at Los Angeles

Final arrangements are being made for installation of the first FIDO equipment at Los Angeles Municipal Airport. Bids for the fog-dispersing equipment are to be let shortly. Babcock and Wilcox Tube Co., Beaver Falls, Pa., and Todd Shipbuilding Corp. are only likely bidders at this time. The system will involve between 369 and 600 nozzles.

Other Lines May Use AA's Ardmore Training Base

An indication that other airlines may soon be using American Airlines' extensive training facilities at Ardmore, Okla., is seen in two recent agreements filed jointly with the Civil Aeronautics Board by American and Braniff Airways. One agreement provides for training certain Braniff pilots at Ardmore; the other for giving DC-6 mechanics supervisory training to Braniff maintenance employes.

The proposed agreements, which would give Braniff the benefit of American's DC-6 experience without the cost and trouble of working out a special training program for Braniff employes, must have CAB approval like all other inter-carrier arrangements.

EAL Enlarging Miami Terminal

Eastern Air Lines is enlarging its 36th Street Terminal in Miami to more than twice its size at a cost of approximately $75,000. The enlarged terminal, 16,460 square feet in area, will be equipped to handle as many as five Constellations and 300 people at one time, and will have 10 counter positions.

Navigator Exam Postponed

A three-months period of grace for compliance with Part 34 of the Civil Air Regulations, which became effective August 1 and which would require flight navigators to hold a valid flight navigator certificate, has been proposed by the CAB Safety Bureau. A new Part 41.322 would make this provision of Part 34 effective November 15, thus giving the Administrator more time in which to prepare examinations and interested navigators an opportunity of standing them. It is proposed, further, to require that in all operations where celestial navigation is necessary, at least one member of the flight crew must be a flight navigator.

Mechanic Regulation Delayed

Due to delays in the revision of Part 24 of the Civil Air Regulations, dealing with mechanic certificates, Special C.A.R. No. 340, which continues the issuance and effectiveness of limited mechanic certificates pending the forthcoming revision, has been ordered extended until December 31, 1947. The CAB held that termination of the special regulation prior to the intended revision would impose an undue burden on propeller and aircraft appliance manufacturers and repair stations.

Temporary Certificates Proposed

A Special Civil Air Regulation which would permit the Administrator to issue air carrier operating certificates to holders of temporary certificates of public convenience and necessity who have not been able to comply fully with Parts 40 and 61 of the C.A.R. has been proposed by the Safety Bureau of the Civil Aeronautics Board. The certificates would be issued in case the Administrator finds that any of the requirements of Parts 40 and 61 can be omitted or modified without adversely affecting safety.

Technical Digest Resumed

Publication of the Technical Data Digest, discontinued in 1945, has been resumed by the AAF. In its new and streamlined form the Digest will contain a broad selection of pre-publication abstracts of technical papers and articles furnished by leading societies and magazines. The publication will be furnished to government agencies, their contractors, and others interested to keep them informed on the latest developments in aeronautics and allied fields. The Digest is to be published semi-monthly by the Air Documents Division of AAF Intelligence, Wright Field, Dayton, Ohio.

Safety Slants

SAFETY ENGINEERS have long campaigned for a fixed parking spot for each piece of ramp equipment. It would require a little planning to mark off a spot for each stand and cart that will be clear of ramp traffic and faced so that it cannot roll out and cause damage to an aircraft or to other equipment, but think of the advantages!

* * *

Another ramp equipment safety feature that warrants more universal adoption is the dead man brake. Such a brake will set itself when a piece of equipment is left unattended. Of course, there are many different braking mechanisms in use on the various stands and carts needed to service an airplane, but if equipment engineers would give a little thought to the problem when planning a new unit, it is likely that the problem could be solved. Perhaps a standardized braking system would be developed that would be applicable to many different types of equipment.

* * *

Statistics show that 60% of all reported fires are put out with hand extinguishers. Since these figures include only those involving insurance claims, there is no doubt that many blazes which cause only minor or non-insured damage are also so extinguished.

* * *

General use of cabin pressurization in new transports has brought new hazards and the need for teaching old dogs new tricks. In spite of safety devices and precautions, there have been several reports of doors being opened on the ground before cabin pressure had been bled off completely. If only one pound differential exists, the pressure on a three by six foot door is over a ton and the sudden release of the large volume of air in a plane fuselage has serious possibilities. Most airlines operating pressurized equipment have procedures which require that the cockpit window be opened and a signal be given before the cabin door is opened. If this procedure is faithfully followed, no trouble should be experienced.

* * *

Are the wooden ladders at your station all nicely painted? If they are you should go and stand in a corner. Painting may improve the appearance and preserve the wood but it also conceals defects. In many industrial plants painting a ladder would be cause for dismissal. New, unpainted ladders should be varnished or coated with oil to preserve the wood. Under no conditions should they be painted. If your ladders are now painted there is not much that can be done, but a program of thorough inspection should be instituted with particular attention paid to slight evidences of cracks and splits. Defective ladders should be tagged and removed from service at once.

* * *

Extreme care should be exercised in working near aircraft fire detectors of the thermostatic type. Such circuits are "hot" at all times and lack of caution can cause a short. Such shorts have been known to cause disastrous fires.

New Utilization Figures

Carrier	April	March
American		
2 eng. pass. ..	8:32	7:33
4 eng. pass. ..	9:24*	9:13
Cargo	8:25	7:34
Braniff		
2 eng. pass. ..	7:16	6:43
4 eng. pass. ..	5:47	5:03
Cargo	....	:40
Caribbean		
2 eng. pass. ..	2:57	2:55
4 eng. pass. ..	....	....
Cargo	....	....
C & S		
2 eng. pass. ..	8:15	8:57
4 eng. pass. ..	6:37	7:03
Cargo	....	....
Colonial		
2 eng. pass. ..	3:35	2:39
4 eng. pass. ..	....	....
Cargo	....	....
Continental		
2 eng. pass. ..	9:10	8:58
4 eng. pass. ..	....	....
Cargo	....	....
Delta		
2 eng. pass. ..	8:16	7:52
4 eng. pass. ..	7:37	7:36
Cargo	6:08	....
Eastern		
2 eng. pass. ..	11:22	11:26
4 eng. pass. ..	9:41	11:12
Cargo	1:52	2:59
Hawaiian		
2 eng. pass. ..	5:54	5:48
4 eng. pass. ..	....	....
Cargo	2:25	2:00
Inland		
2 eng. pass. ..	10:49	8:45
4 eng. pass. ..	....	....
Cargo	....	....
MCA		
2 eng. pass ..	8:06	8:27
4 eng. pass. ..	....	....
Cargo	....	....
National		
2 eng. pass. ..	9:07	....
4 eng. pass. ..	10:25	10:36
Cargo	....	....
Northeast		
2 eng. pass. ..	5:36	5:16
4 eng. pass. ..	3:23	4:05
Cargo	....	....
Northwest		
2 eng. pass. ..	8:54	8:32
4 eng. pass. ..	8:18	9:38
Cargo	....	....
PCA		
2 eng. pass. ..	8:03	7:12
4 eng. pass. ..	6:19	5:34
Cargo	5:53	3:08
TWA		
2 eng. pass. ..	10:31	9:43
4 eng. pass. ..	6:23	5:15
Cargo	6:33	4:52
United		
2 eng. pass. ..	10:52	10:50
4 eng. pass. ..	10:03†	10:21
Cargo	8:04	8:05
Western		
2 eng. pass. ..	6:14	7:49
4 eng. pass. ..	6:20	6:45
Cargo	....	....

* DC-6 utilization: 3:15
† DC-6 utilization: 2:01

AA-WAL in Joint Service Agreement at San Francisco

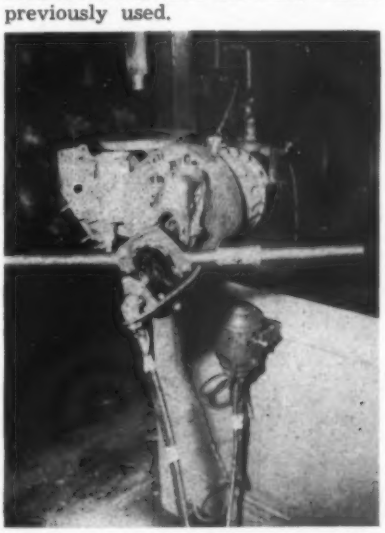
A cooperative joint service agreement in the San Francisco Bay area has been put into effect by American Airlines and Western Air Lines in connection with the former's new service into San Francisco and Oakland. This is the second such agreement for Western, which some time ago made a similar arrangement with Mid-Continent Airlines at Minneapolis and St. Paul.

The agreement calls for Western's handling of all of American's functions and facilities at the San Francisco and Oakland airports, including fueling, line checks, maintenance, communications, passenger check-ins, and handling of mail and express.

The ticket office arrangement allows American to share Western's main downtown office on Geary Street in San Francisco, and for Western to share American's office in the financial district. American also shares Western's Oakland ticket office. Agents of both companies staff each office and serve passengers for either line.

Power-Driven Valve Guide Reamer Devised by Braniff

The power driven valve guide reamer illustrated below has been developed by Braniff Airways at its main overhaul base in Dallas. It permits considerably faster and more accurate work than the hand reamer previously used.



The assembly consists of a Hall valve seat grinder with a type JH1045 gear box from a J&H starter. The gear box is mounted on a holding fixture resembling a die handle, and an electric switch controlling the motor is located on the handle. A cross pin, which engages the starter gear box handle socket, is installed in the handle end of the valve guide reamer.

New Scenic Airway

Because of an increase in air traffic between San Francisco and Los Angeles, the Civil Aeronautics Authority has granted Western Air Lines a coastal airway as an alternate to its inland-valley run between the two cities.

The new airway, which follows the coast for 369 air miles, is one of the most scenic in the nation.

Airlines Renew GCA Deal at Gander

American and foreign airlines operating through Gander, Newfoundland, have agreed unanimously to continue using the GCA equipment operated by Pan American Airways at Gander. Airlines which have used the equipment since it was installed last December have been joined by the Belgian airline Sabena in signing share-cost contracts to use the radar for another year.

PAA reports that approximately 1,160 radar-controlled let-downs have been made at Gander—a figure which should grow considerably if the CAA grants another reduction in minimums for GCA approaches. Present minimums of 400 feet and three-quarters of a mile, compared with 500 feet and one mile for landings without GCA, were allowed by the CAA in giving Gander the first official approval of GCA in scheduled operations.

Lockheed Aircraft Service Adds 100 Workers to Payroll

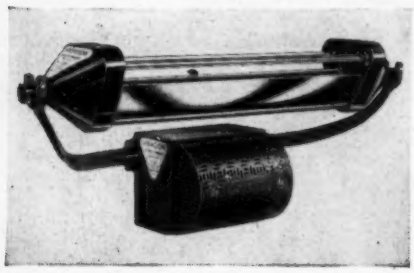
The MacArthur Airport (Long Island) maintenance base operated by Lockheed Aircraft Service, Inc., which has built up a payroll of more than 700 since it opened less than a year ago, is adding 100 additional skilled aircraft workers to take care of increased heavy maintenance and modification work.

Lockheed Service's contract with the Atlantic division of ATC has been extended beyond the original expiration time. Lockheed is now providing 50, 100 and 300 hour service, engine change inspections, and compliance with AAF technical orders and AAF maintenance directives. A total of 17 C-54's is covered by the contract.

Further physical expansion of the MacArthur Field base is provided in an 800,000 gallon water system for fire protection. Contracts for work on this project, totalling more than $150,000, call for completion by early fall. Pumps in the new system will have a combined capacity of more than 10,000 gallons per minute.

Viragon Air Purifier

Although originally developed for deodorizing and sterilizing air in waiting rooms, restaurants and lavatories, this Viragon air sanitizing machine soon will be produced in a transit model for installation in aircraft cabins, trains and buses. In passenger aircraft it will serve to keep the air free of tobacco and other odors; in cargo planes it will both eliminate odors and kill airborne bacteria harmful to perishables.



The complete unit, incorporating an ultra-violet tube, ozonizer and magnet, will come in a compact cylinder 24 inches long and about six inches in diameter which can be installed either horizontally or vertically. Installation is no more difficult than hooking up a light or a fan and can be made on any convenient cabin wall or overhead surface. It will have a built-in six volt inverter, or can be adapted to use any standard aircraft power source. Unlike many ozonators, the Viragon unit can be operated continuously.

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Pressure Transmitters

This Autoflight pressure transmitter unit, offering high accuracy with a large electrical AC or DC signal, is designed for use with air, oxygen, gasoline, oil, hydraulic fluid and other liquids and gases. It combines controlled action bellows and microtorque potentiometers into one unit. The new 4600 Series can be supplied in resistances ranging from 100 to 20,000 ohms, and standard ranges from 0 to 00 psi. Accuracy is 2%, weight is approximately 1.3 pounds, overall length under 6 inches, and maximum width 3 inches. Autoflight Instruments Division, G. M. Giannini & Co., Inc., 285 W. Colorado St., Pasadena, Calif.

Infant's Flight Cradle

More comfortable travel for mothers with babies, and less bother for stewardesses and fellow-passengers, is offered with a new flight cradle developed by Goble Aircraft Specialties, Inc., 40-22 Lawrence St., Flushing, N. Y. The cradles, which normally are placed between the front row of seats and the forward cabin bulkhead, can be set up quickly by the stewardess and stowed away when not in use. An adjustable support arm permits use on different types of equipment. The complete cradle and stowage case weighs only four pounds.

Features include a plastic inner liner which is easily removable for cleaning and sterilizing; a plastic safety cross-panel which serves as a play tray when the baby is sitting up; and construction of flame resistant materials which comply with CAR Part .04.

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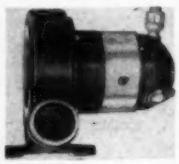
Combustion Air Blower

A new blower for aircraft and other gasoline combusion heaters is available from Dynamic Air Engineering, Inc., 1619 S. Alameda St., Los Angeles. A new type impeller is used to provide greater efficiency with less noise. Model 125J delivers 90 cu. ft. of air per minute at 6 inches S. P., W. G., at 9600 rpm. with a power requirement of 8 amperes on 27 volts DC. Dimensions are slightly more than 6 by 6 by 5 inches, and the unit weighs 5¾ pounds.



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Parts Cleaning Machine

An improved machine particularly designed for cleaning instruments and parts too small to be handled manually is offered by the L & R Mfg. Co., 577 Elm St., Arlington, N. J. The machine has a work basket measuring slightly more than three by five inches, into which triple nesting baskets fit to permit cleaning of three sets of parts at one time without danger of mixing. The self-contained unit cleans, rinses, polishes and dries parts without rehandling. List price of the complete machine is $262.50.

Underground Fueling Pit

Cooperation between Harmon Equipment Co. of Los Angeles and the Standard Oil Co. of California has resulted in this improved airport fueling pit. The compact unit features a self-winding hose reel, and a gasoline-water separator.

The separator includes a sump water level indicator showing at all times the amount of water in the pit. Provision is made for simple and convenient draining. Access to the unit is through an 18-inch service door, and the entire surface cover may be removed by releasing only one nut. Inspection and repair is facilitated by specially-designed non-explosive interior lighting.

•

Aviation Penetrating Oil

A penetrating and rust-dissolving compound for loosening exhaust manifold fittings, studs and other threaded connections has been placed on the market as a companion product to Gunk solvents. The penetrating fluid also possesses all-temperature lubricating properties which make it suitable for freeing and lubricating throttle and other remote control cables. Full information is available from The Curran Corp., South Canal St., Lawrence, Mass.

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Runway Marker Lights

These new elevated runway and strip marker lights are designed to meet the latest CAA specifications L-802 for conversion of semi-flush contact lights. As medium intensity markers they provide greatly increased visibility for strips and taxiways. The lights are manufactured by American Gas Accumulator Co., Elizabeth, N. J., and distributed by General Electric Co.

Advertisers In This Issue

Product Literature and Booklets

The Navy has released a 36-page illustrated report on "Research for Developing an Accurate Method to Determine the Temperature of Free Air Surrounding an Airplane." Photostat copies at $3.00 and microfilm prints for $1.00 are available from the Office of Technical Services, Commerce Department, Washington 25, D. C.

* * *

"Airplane Power" is an 80-page book published by General Motors Corp., Detroit, Mich., to describe the relationship between engine design and performance at varying altitudes. It is written in a manner understandable to a layman but useful to the technician, and is illustrated with numerous diagrams and charts.

* * *

A revised booklet describing Gurley meteorlogical instruments has been prepared by W. & L. E. Gurley, Troy, N. Y. It covers wind direction and velocity instruments; electronic and DC (Windpowered) anemometers; various types of wind direction instruments; graphic recorders, and pilot balloon theodolites.

A new stock list showing available fasteners, screws, bolts, rivets, etc., has been issued by Stronghold Screw Products Co., 216 W. Hubbard St., Chicago.

* * * *

An airport directory which lists the types of Mobilgas gas available at airports throughout the country has been prepared by the Aviation Department, Socony-Vacuum Oil Co., Inc., 26 Broadway, New York. It is available without charge to pilots.

* * *

American Nickeloid Co., Peru, Ill., has available a folder on coils of nickel, chrome, brass and copper steel. The coiled metals, usable in many applications in place of sheet, come in widths up to 24 inches.

* * *

"Trim-Trol" equipment, which employs a new principle for electric operation of trim tabs, is described in a new four-page folder available from the manufacturer, Airborne Accessories Corp., 25 Montgomery St., Hillside 5, N. J.

Various low travel limit switches, relays and other environment-free aircraft equipment are described in Catalog No. 221 issued by Phaostron Co., 151 Pasadena Ave., South Pasadena, Calif. The booklet also lists Phaostron's facilities for development and manufacturing.

* * *

Three new multi-channel communication transmitters for ground-to-air and point-to-point service are described in an illustrated booklet issued by Federal Radio and Telephone Corp., Clifton, N. J. The booklet features a transmitter buying chart to indicate how basic equipment can be expanded and interchanged to meet future requirements.

* * * *

Cessna Aircraft Corp. is distributing a graphic 28-page booklet. Confidential Report for Business Men, making actual comparison of what it costs in both time and dollars for salesmen to travel by Cessna private plane and by automobile or train.

Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications $1.00 a line, minimum charge $4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1317 F Street N. W., Washington 4, D. C.

NOTICE TO BIDDERS

NOTICE TO BIDDERS. Sealed bids for the leasing and operating of a public airport known as Linden Airport, formerly known as the Eastern Aircraft Airport at Linden, N. J., located at U. S. Route 1, State Highway Route 25, and Stiles Street in the City of Linden, Union County, New Jersey, will be received by the Governing Body of the City of Linden at the City Hall, Wood Avenue and Blancke Street, Linden, New Jersey, until 9 P. M. Eastern Daylight Saving Time on Tuesday, the 19th day of August, 1947, and then publicly opened and read. Bidders may obtain "Information for Bidders and Specifications" and additional information from City Clerk, City Hall, Linden, New Jersey. Each bidder must deposit with his Bid a certified check made payable to the order of the City of Linden in the amount of $5,000.00, subject to the conditions provided in the "Information for Bidders and Specifications." No bidder may withdraw his bid within forty-five (45) days after the actual date of the opening thereof. The right is reserved to reject any or all bids, to waive any informalities in the bids, and to accept the bid deemed most favorable to the interests of the City of Linden. By order of the Common Council of the City of Linden. Thomas J. Wieser, City Clerk.

POSITIONS WANTED

THE AIRMAN'S GUIDE HAS BEEN DISCONTINUED BECAUSE OF CONGRESSIONAL BUDGETARY CUTS. ITS EDITOR WHO HAS EXTENSIVE EXPERIENCE IN AIRPORT & AIRWAY OPERATIONS, PUBLIC RELATIONS, ECONOMICS, AND BUSINESS MANAGEMENT, AND WHO IS FREQUENTLY RETAINED ON A CONSULTANT BASIS IS INTERESTED IN LEAVING GOVERNMENT AND MAKING AN INDUSTRY CONNECTION. HE HAS A COMMERCIAL LICENSE, INSTRUMENT RATING, 1700 HRS., AND A B.A. IN BUSINESS ADMINISTRATION, AND IS 38 YEARS OLD. RICHARD J. AUBRY, 708 GRANDVIEW DRIVE, ALEXANDRIA, VIRGINIA.

Airline Transport Pilot, Single & Multi-engine ratings to 6600 H.P. Instrument rating 3000 hrs. 5 yrs. airline experience on both foreign & domestic routes. Age 32. Married. Will accept employment with individual or company as pilot anywhere. Box No. 581, American Aviation, 1317 F. St., N. W., Washington 6, D. C.

AIRLINE CAPTAIN, 33, excellent health, 7100 hrs., 4 yrs. naval flying, 7½ yrs. pilot world's largest international airline, Harvard A.B., must leave overseas flying due family's health, desires position as executive or feederline pilot. E. C. HODSON, 144-80 Sanford Ave., Flushing, N. Y.

Wings of Yesterday

25 Years Ago

Eighty-seven radio equipped airplanes started fire patrol over the national forests. (Aug. 1, 1922)

The Detroit News installed an experimental radio set in the Aeromarine flying boat "Buckeye;" passengers listened to a concert while in flight between Detroit and Cleveland. (Aug. 3, 1922)

The Aeromarine flying boat "Buckeye" carried a Ford car from Detroit to Cleveland in 90 minutes. This was the first delivery of an automobile by air. (Aug. 15, 1922)

15 Years Ago

A flying boat for the U. S. Navy, second in size only to the DO-X, was under construction at the Hall-Aluminum Aircraft Corp. plant, Buffalo. Like the DO-X, the new navy craft was powered with Curtiss engines.

Seven of the country's largest airlines and the Postal Telegraph-Cable Co. formed an association called the General Air Express. This association gave air express service to 138 large cities, making door-to-door pickup and delivery. The lines were American Airways, Transcontinental and Western Air, Eastern Air Transport, Transamerican Airlines, United States Airways, Pennsylvania Airlines, and Ludington Air Lines.

Letters

Middle Man's Defense

To the Editor:

This is submitted not in a spirit of criticism but rather to present the other side of an argument which Mr. Wayne Parrish discussed at some length in the July 15th issue of *American Aviation* entitled "Unnecessary Middle Man" . . .

The editorial opens with a description of what, in shipping circles, is known as carloading or consolidating. This single phase of a forwarder's work is presented by Mr. Parrish as the only service a forwarder performs in either surface shipping or air shipping. The problems confronting shippers to cities abroad by both steamer and aircraft were not considered . . .

Forwarders will continue to occupy just as important a place in international air commerce as they have done for years in steamer shipping because foreign countries have varying tariffs and customs regulations for air shipments and steamer shipments alike. Reforwarding will always continue to be an integral part of shipping. The airlines know this and not only solicit the business forwarders generate, but also pay a commission for this business . . .

Mr. Parrish states rather strongly that "probably no forwarder has ever talked anyone into sending a shipment which the shipper was not going to send anyway" . . .

Many large companies that ship to all parts of the world have export departments, while just as many others employ the services of a forwarder, rather than having to maintain such a department. For the same reason many companies with export departments for bulky steamer shipments use air freight forwarders for their air express. It is a well known fact that the airlines, both domestic and foreign, have become so competitive that the frequency of rate changes and route scheduling is making the printers rich and is keeping air shippers in a daze. Remaining well informed on rates and routes to all parts of the world is just one other of the many services an Air Freight Forwarder has to offer the shipper.

C. P. E. HOLLOWAY.

Try Again

To the Editor:

I give up. Where did you hide it? After reading the item headed "Specialization" in "Background and Trends," July 15 issue, I started to look for the Luttrell and Senior ad. The result is I have carefully read every ad in that issue, and perhaps know more about its contents than you do, but—no Luttrell and Senior. And I thought the *Saturday Evening Post* had a pretty cute way of making people read ads with their ad "Quiz Contest."

JACK WOODS,
Woods and Riblet Inc.,
New York, N. Y.

(Editor's Note: As can happen in the best of issues, Luttrell and Senior's eye-catching ad was delayed and arrived at the printing plant too late to catch the deadline. However, if Jack Woods will look through this issue, his search will be rewarded.)

Local Caterpillars

To the Editor:

It would be greatly appreciated if you would publish this letter concerning the Caterpillar Club which is now organizing into local units.

In 1945, members of the Caterpillar Club voted by an overwhelming majority to have an independent, member-operated club and organize chapters throughout the country. This was done, although the chapter organization work has just begun. We know there are hundreds and perhaps thousands who are eligible for membership but lack knowledge of the Caterpillar Club and just where to write for application blanks.

Those who "bailed out" in an emergency are eligible. They should apply for an application blank to: Caterpillar Club, Broad Street Bank Building, Trenton, New Jersey.

Each member receives a distinctive pin, certificate of jump and the Caterpillar Club magazine containing news of the Club and its members. Our principal aim is "Safety in Flying."

LEO A. SMITH,
Acting Secretary.

Books

HIGHWAYS IN THE SKY. By Louis Shores. Barnes & Noble, Inc., 5th Ave. and 18th St., New York. 264 pp. $3.00.

This is the official story of the Army Airways Communication System, that "highway in the skies" over which AAF and ATC planes moved vast quanity of materiel and personnel during the years of the war. Dr. Louis Shores, the author, as commanding officer of the 10th AACS Squadron and as a former librarian and college professor, was eminently qualified to tell this story of the construction and maintenance of more than 100,000 miles of airways and 1,000 airways stations in every part of the world, and the part this vital communications link played in the air war. Royalties go to the AAF Aid Society.

AIR FORCE DIARY. Compiled and edited by Col. James H. Straubel, Air Force Reserve. Simon and Schuster, 1230 Sixth Ave., New York. 492 pp. $3.75.

This authoritative account of the part the Air Forces played in World War II was written entirely by AAF men—pilots, navigators, bombardiers, gunners, flight engineers, Mechanics and others—and thus carries the authority of an expert eyewitness account. Packed between its covers are 111 of the best stories which were written by AAF men for their own official monthly publication, *Air Force Magazine*, whose editor selected and edited them for inclusion in this definitive book. All royalties from its sale go to the Army Air Forces Aid Society.

AIRCRAFT ENGINES OF THE WORLD, 1947. Edited and published by Paul H. Wilkinson, 216 E. 45th St., New York, N. Y. 352 pp. Illustrated. $10.00.

The 1947 revised edition of Wilkinson's world-wide reference book on power plants follows the style of previous editions. A substantial increase in size of this year's volume results both from data on newly-developed jets, turbines and reciprocating types, and from recently acquired data on engines in such countries as Czechoslovakia, Italy and Russia.

YOU CAN LEARN TO FLY. By Beverly E. (Bevo) Howard and William D. (Bill) Strohmeier. Published by Prentice-Hall, Inc., 70 Fifth Ave., New York City. 324 pp. $3.75.

Two of the nation's outstanding airmen pooled their experiences and knowledge to produce this authoritative, readable book on learning to fly. While slanted primarily at the average person who is interested in learning to fly and in owning and using a plane, this work contains such an abundance of information and tips on techniques gleaned from the more than 11,000 hours of flying experience of the authors that almost any private pilot will find it worthwhile reading and the equivalent of a "check ride."

The book contains two valuable appendices, one on "Starting and Running an Airport," and another on "How to Fly Floats."

Obituary

Edgar Gott

Edgar Gott, 60, a pioneer in the aircraft manufacturing field, died July 17 at San Diego after a long illness. Retired since October 1, 1944, Gott had served for nine years with Consolidated Aircraft Co. and its successor, Consolidated-Vultee, as vice president and later as assistant to the president. One of the original incorporators and first general manager of the Boeing Airplane Co., he had been a vice president and director of the Manufacturers Aircraft Association and a director of the Aeronautical Chamber of Commerce, predecessor of the Aircraft Industries Association.

Martin E. Leadon

Martin E. Leadon, 52, general superintendent of aircraft maintenance for Northwest Airlines, died following a heart attack in Edmonton, Canada, on July 3. Mr. Leadon had been with Northwest for 18 years.

★ Aeronautical Division Factory Branch Offices

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